PALATABLE TONIC LAXATIVE.

FERRIS & Co.'s PATENT CASCARA CHOCOLATE BONBONS.

Prepared with the finest sweetened Eating Chocolate, the proportion of the active ingredient being carefully adjusted so that each Tablet or Bonbon contains a dose equivalent to twenty minims of the Fluid Extract of Cascara. The Tablets are of such a form that they can be easily divided, should a smaller dose be desired; and *the taste can hardly be distinguished from that of ordinary Chocolate.*

Feb. 8, 1889.
"Your tasteless liquid extract of Cascara Sagrada, and the Bonbons have given me great satisfaction. A little patient greatly appreciates the bonbons."
——, M.R.C.S.
To Messrs. FERRIS & Co.

Feb. 13, 1889.
"Dear Sirs,—Please send me a dozen boxes of your Cascara Bonbons. They are a very pleasant way of taking a valuable and nauseous medicine, and they answer their purpose admirably."
——, L.R.C.P., M.R.C.S.
Messrs. FERRIS.

In habitual or chronic constipation. Invaluable for children, ladies and invalids. No nauseous bitter taste. By far the most agreeable form of administering Cascara Sagrada yet introduced.

IN BOXES 1s. 9d. each, 18s. PER DOZ.

SOLE MANUFACTURERS AND PATENTEES, FERRIS & COMPY., BRISTOL.

NEPENTHE.

THE SAFEST AND BEST PREPARATION OF OPIUM.

PRODUCES NEITHER

Headache, Sickness, nor Constipation.

NEPENTHE may be used with perfect safety in every case where an opiate is indicated, and from the peculiar process by which it is prepared, it is deprived of all constituents which render the Tinctura Opii, and other forms of Opium, in very numerous instances, wholly inadmissible. It is always of uniform strength, and in this respect possesses high advantages. Nepenthe does not produce headache, stupor, giddiness, depression of spirits, diminution of nervous energy, prostration of strength, nor constipation, but induces natural and refreshing sleep. Nepenthe is now in constant use by the medical profession throughout the United Kingdom and the Colonies, and in the leading hospitals; and we beg respectfully to urge our friends to give it a fair trial, fully satisfied that the result will be its very general substitution for the ordinary forms of Opium and its salts. Nepenthe will be found very useful when it is needful to prescribe an opiate without the knowledge of the patient, as it is now almost impossible to do this from any of the usually recognised formulæ.

In spite of the large number of "new hypnotics" which have been recently introduced to the notice of the medical profession, and recommended, some of them very highly, Nepenthe still holds its position as *the* hypnotic and sedative *par excellence*; it is constantly increasing in favour, and the sale is larger now than it ever was.

PREPARED EXCLUSIVELY FROM OPIUM.

SOLE MANUFACTURERS:

FERRIS, BOORNE, TOWNSEND & BOUCHER

Wholesale and Export Druggists,

BRISTOL.

NOTICE.—*Messrs. FERRIS & CO. are the ONLY Manufacturers of* NEPENTHE, *and medical gentlemen are especially cautioned against using any preparation which does not bear their name and label.*

NEPENTHE *is registered under the Trade Marks' Act, and protected by a facsimile of signature pasted over each cork and is sent out in bottles bearing a label in white letters upon a green ground.*

THE

UNIVERSAL DIGESTIVE TEA

This Tea is dried and prepared by a patented process, by which the TANNIN is entirely NEUTRALIZED (not extracted).

WHOLESOME! REFRESHING! ECONOMICAL!

This Tea has been approved by over 500 MEDICAL TESTIMONIALS, and already over 12,000 SAMPLES have been applied by MEDICAL MEN for Distribution to their patients.

The UNIVERSAL DIGESTIVE TEA is enjoyed by DYSPEPTICS as well as by those in ROBUST HEALTH.

The process by which the UNIVERSAL DIGESTIVE TEA is dried and prepared has been explained to a number of leading Physicians in London and other parts of the Kingdom, and has received their HEARTY APPROVAL.

The Universal Digestive Tea Company Limited, will be pleased, upon receiving Name and Address, to forward samples free for distribution, and give any information respecting the Tea to any member of the profession.

PLEASE ADDRESS TO—

The Universal Digestive Tea Company Limited

64, CORPORATION STREET, MANCHESTER.

CHAMBERS'S ENCYCLOPÆDIA

A DICTIONARY OF UNIVERSAL KNOWLEDGE.

ENTIRELY NEW EDITION

TO BE COMPLETED IN TEN VOLUMES, IMPERIAL 8vo

Now Ready, Vols. I., II. and III.

Price 10s. each, Cloth; 15s. each, Half-Morocco

OPINIONS OF THE PRESS.

TIMES.—"For many, probably most, people, this work contains all the are ever likely to require."

DAILY TELEGRAPH.—"The advent of a new edition, accurate, liberal and cheap, will be welcomed with a very general approval."

STANDARD.—"Almost every subject likely to interest an intelligent person is here."

LITERARY WORLD.—"The new Encyclopædia is no mere tasteless compilation, but apart from the fulness and accuracy of its information, has a distinct literary value of its own."

PALL MALL GAZETTE.—"For practical utility these volumes could hardly be exceeded."

W. & R. CHAMBERS,

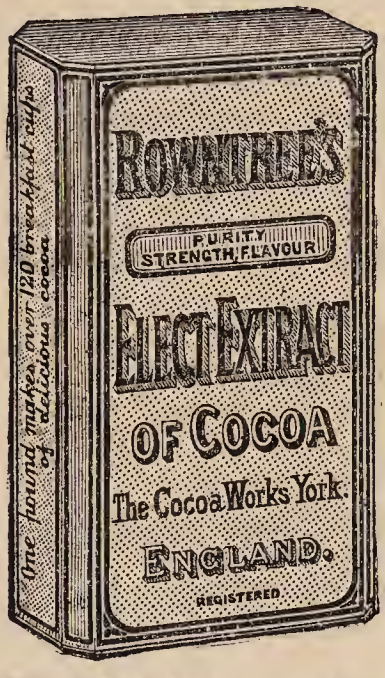
47, PATERNOSTER ROW, LONDON; AND EDINBURGH.

ROWNTREE'S
ELECT COCOA

PURITY

STRENGTH

FLAVOUR



PURITY

STRENGTH

FLAVOUR

The "ELECT" COCOA is characterized by Extraordinary Strength and by a Refreshing and Delightful Taste and Aroma.

Can be made in a moment.
Is extremely soluble and digestible.
Is ECONOMICAL—one pound makes over 120 cups of strong and delicious cocoa.

The "*Lancet*" says—Strong and pure..Free from Acrid Taste.

"*British Medical Journal*"—One of the best....Flavour and Aroma are good.

"*Medical Press*"—Certainly of a delicate flavour..perfectly soluble.

"*Medical Annual*," 1889—Possesses an unusual degree of solubility, a full aroma, and is free from that acridity which such highly concentrated extracts usually possess.

Highly commended by other Journals and many influential members of the Profession.

Put up in 1-lb., ½-lb., and ¼-lb. tins (as illustration) and in 6d. square tins.

THE COCOA WORKS, YORK, ENGLAND.

H. K. LEWIS'S PUBLICATIONS.

A Handbook of the Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P., Examiner in Medicine at the University of London; Professor of Therapeutics and of Clinical Medicine at University College; Physician to University College Hospital, and to the Brompton Hospital. *Seventh Edition, Revised and Enlarged, with Illustrations, large 8vo,* 21*s.*

A Handbook of Therapeutics. By Sydney Ringer, M.D., F.R.S., Professor of Medicine in University College, Physician to University College Hospital, &c. *Twelfth Edition, demy 8vo,* 15*s.*

Treatment of Disease in Children. By Angel Money, M.D., F.R.C.P., Assistant Physician to University College Hospital, and to the Hospital for Sick Children. *Crown 8vo,* 10*s.* 6*d.*

BY THE SAME AUTHOR.

The Student's Text-Book of the Practice of Medicine. *Fcap. 8vo,* 6*s.* 6*d.*

The Extra Pharmacopœia, with the Additions introduced into the British Pharmacopœia, 1885, and Medical References, and a Therapeutic Index of Diseases and Symptoms. By WILLIAM MARTINDALE, F.C.S., and W. WYNN WESTCOTT, M.B.Lond. *Fifth Edition, 24mo, in limp roan,* 7*s.*

The Pathology and Treatment of Displacements of the Uterus. By Dr. B. S. SCHULTZE, Professor of Gynæcology in Jena. Translated from the German by J. J. MACAN, M.A., M.R.C.S. Eng., and Edited by A. V. MACAN, M.B., M.Ch. *Medium 8vo, with* 120 *Illustrations* 12*s.* 6*d.*

A Practical Text-Book of the Diseases of Women. By ARTHUR H. N. LEWERS, M.D.Lond., M.R.C.P.Lond., Assistant Obstetric Physician to the London Hospital. *With Illustrations, crown 8vo,* 8*s.* 6*d.*

On Diseases of the Lungs and Pleuræ, including Consumption. By R. DOUGLAS POWELL, M.D., F.R.C.P.Lond., Physician to the Middlesex Hospital. *Third Edition, 8vo,* 16*s.*

A Manual of Ophthalmic Practice. By C. Higgens, F.R.C.S. Ophthalmic Surgeon to Guy's Hospital. *With Illustrations, crown 8vo,* 6*s.*

The Treatment of Lateral Curvature of the Spine. By BERNARD ROTH, F.R.C.S., Fellow of the Medical Society of London. *Demy 8vo, with Photographic and other Illustrations,* 5*s.*

The Causation of Disease: an Exposition of the Ultimate Factors which Induce it. By HARRY CAMPBELL, M.D., B.S.Lond., M.R.C.P.Lond., Assistant Physician and Pathologist to the North-West London Hospital. *Demy 8vo,* 12*s.* 6*d.*

Anæsthetics, Their Use and Administration. By DUDLEY W. BUXTON, M.D., B.S., Administrator of Anæsthetics to University College Hospital. *Crown 8vo,* 4*s.*

Manual of Hypodermic Medication. By Drs. BOURNEVILLE and BRICON. Translated from the Second Edition, and Edited, with Therapeutic Index of Diseases, by ANDREW S. CURRIE, M.D. Edin., &c. *Crown 8vo,* 6*s.*

Catalogue of Mr. LEWIS'S Publications post free on application.

LONDON: H. K. LEWIS, 136, GOWER STREET, W.C.

H. K. LEWIS'S PUBLICATIONS.

Diseases of the Skin, their Description, Pathology, Diagnosis, and Treatment. By H. RADCLIFFE CROCKER, M.D. Lond., F.R.C.P., Physician, Skin Department, University College Hospital. *Large 8vo, with numerous Illustrations*, 21*s.*

Elements of Practical Medicine. By ALFRED H. CARTER, M.D. Lond., M.R.C.P. Lond., Physician to the Queen's Hospital, Birmingham. *Fifth Edition, Revised, crown 8vo*, 9*s.*

Massotherapeutics; or, Massage as a Mode of Treatment. By WILLIAM MURRELL, M.D., F.R.C.P., Lecturer on Pharmacology and Therapeutics at the Westminster Hospital. *Fourth Edition, with Illustrations, crown 8vo*, 4*s.* 6*d.*

Handbook of Diseases of the Eye and their Treatment. By HENRY R. SWANZY, A.M., M.B., F.R.C.S.I., Surgeon to the National Eye and Ear Infirmary, Dublin, etc. *Illustrations, Second Edition, post 8vo*, 10*s.* 6*d.*

Diseases of the Kidneys and Urinary Derangements. A Practical Treatise. By C. H. RALFE, M.A., M.D. Cantab., F.R.C.P., Lond., Assist.-Phys. to the London Hospital. *Illustrations, crown 8vo*, 10*s.* 6*d.*

LONDON: H. K. LEWIS, 136, GOWER STREET, W.C.

THE NEW SYDENHAM SOCIETY.

INSTITUTED 1859.

President:—W. T. GAIRDNER, M.D., LL.D.
Treasurer:—W. SEDGWICK SAUNDERS, M.D., F.S.A.
Hon. Secretary:—JONATHAN HUTCHINSON, Esq., F.R.S.

ANNUAL SUBSCRIPTION ONE GUINEA.

THE SERIES FOR 1888.

Spiegelberg's Text-Book of Midwifery.—Translated by J. B. HURRY, M.A., M.D. Cantab. Vol. II. (Vol. I. was issued for 1887.)

Lexicon of Medicine and the Allied Sciences. By HENRY POWER, M.B., and LEONARD SEDGWICK, M.D. Part XV.

Henoch's Diseases of Children.—Translated by J. THOMPSON, M.D. Vol. I.

Cohnheim's General Pathology.—Translated by A. B. MCKEE, M.D. Vol. I.

THE SERIES FOR 1889 WILL COMMENCE WITH:—

The Seventh Fasciculus of the Atlas of Pathology.

Charcot's Lectures on Diseases of the Nervous System.—3rd Series. Translated by DR. SAVILL.

Other volumes to complete the series will be announced shortly.

Full information, with lists of the Society's Publications and Surplus Volumes, will be sent, post free, to any address on application to the Society's Agent:—

Mr. LEWIS, 136, GOWER STREET, LONDON, W.C.

SOLUBLE PODOPHYLLIN.

LIQ: PODOPHYLLIN (HOCKIN).

Miscible (bright) in Aquos, Acid, or Alkaline Solutions, also with Decoctions, Æthers, Infusions, Tinctures, &c.

THESE PREPARATIONS CONTAIN NO COLOURING MATTERS.

Each Drachm is equal to Podophyllin Pur: ¼ Gr.

The valuable cholagogic action of Podophyllin has been thoroughly established, and as a hepatic stimulant it has no equal.

Liq. Podophyllin (HOCKIN) is offered to the Medical Profession as a solution of pure Podophyllin, easily and elegantly dispensed with other drugs, or simply diluted (one drachm to half-ounce of water), as a reliable remedy in gastric disturbances generally consequent upon torpidity of the liver.

LIQ. PODOPHYLLIN ET PEPSIN

(HOCKIN).

A Soluble Preparation of Podophyllin and Pure Pepsin. Of great digestive power. DOSE—One Drachm.

LIQ. PODOPHYLLIN ET BELLADONNA C. STRYCHNIA (HOCKIN).

Synonymous LIQ. HOCKIN.

Each Drachm equals—

PODOPHYLLIN RESIN	¼ gr.
EXT. BELLADONNA RAD. ALCH.	⅛ ,,
STRYCHNIA	1/30 ,,

PREPARED ONLY BY

HOCKIN, WILSON & CO.,

Wholesale Druggists & Manufacturing Chemists,

13 to 16, NEW INN YARD, 186a, TOTTENHAM COURT ROAD, LONDON, W.
And 64, CORPORATION STREET, MANCHESTER.

Price (for Dispensing) 16 oz. Bot., 7/-; 8 oz. Bot., 4/-; 4 oz. Bot., 2/6.
Winchester Quarts charged 6/9 per lb.

All Bottles and Packing free, Postage only charged as follows:—16 oz. Bot., 6d. 8 oz. Bot., 6d., 4 oz. Bot., 3d. extra.

Press-Medical Opinions of Hockin's Preparatio s on application.

Braithwaite's Retrospect.

July, 1889.

[*The American Edition of this work (reprinted from advance sheets supplied by the Editor) is published by the* W. A. TOWNSEND PUBLISHING COMPANY, 153, *Broadway, New York, U.S.*]

[*A Spanish Edition (by arrangement with the Editor) is published by* D. CARLOS BAILLY-BAILLIERE, *Plaza de Santa Ana, No.* 10, *Madrid.*]

Communications for the Editor to be addressed, Dr. BRAITHWAITE, *Leeds. Parcels of Books to* Messrs. SIMPKIN, MARSHALL, & Co., *London.*

The Proprietors of "THE RETROSPECT," which has now been established nearly half a century, having frequently been asked to insert ADVERTISEMENTS therein, have now decided to admit those of a select nature, and have appointed **Mr. A. P. WATT, 2, Paternoster Square, London, E.C.**, their sole Agent for the collection and receipt of Advertisements, and to him all communications should be addressed, a month before the date of each publication at latest.

ADVANTAGES: *Large Circulation—Permanency—Reasonable Charges.*

PRINTED FOR D. I. ROEBUCK,
BY GOODALL AND SUDDICK, COOKRIDGE STREET, LEEDS.

SCOTTISH PROVIDENT INSTITUTION.

EDINBURGH, *6, St. Andrew Sq.* LONDON OFFICE, *17, King William St., E.C.*

THIS SOCIETY combines the advantages of
Mutual Assurance with **Moderate Premiums.**

The **Premiums** are so moderate that an Assurance of £1,200 or £1,250 may generally be secured from the first for the yearly payment which would elsewhere assure (with profits) £1,000 only—being equivalent to an immediate Bonus of 20 to 25 per cent.

A person of 30 *may secure at once* a provision of £5,000 for his family, in case of his death, by a payment of little more than £100 a year

The Whole **Profits** go to the Policyholders, on a system at once safe and equitable—no share being given to those by whose early death there is a loss.

ON THIS PRINCIPLE large additions have been, and will be, made to the policies of those who live to participate, notwithstanding the lowness of the premiums.

The **Surplus** at last Investigation was £1,051,035, of which £350,345 was *reserved* for future participation. The number who shared was 9,384. First shares were (with a few unimportant exceptions) from 18 or 20 to 24 per cent., according to age and class. Other policies were increased 50 and 80 per cent.

The following are the Results reported for the last year :—

The NEW ASSURANCES completed in 1888 were £1,163,044.
Being for the 15th year in succession above a million.

PREMIUMS in year, £558,875. Total INCOME, £855,886.

The CLAIMS of year (including Bonus additions*) were £328,530.
* These Bonuses averaged 49·5 on the Assurances which participated.

REALISED FUNDS (increased by £401,212) at close of year, **£6,516,468.**

Examples of Premium for £100 at Death—with Profits.

AGE.	25	30	35	40	45	50
During Life	£1 18 0	£2 1 6*	£2 6 10	£2 14 9†	£3 5 9	£4 1 7
21 Payments	2 12 6	2 15 4	3 0 2	3 7 5	3 17 6	4 12 1

[The usual *non-participating* rates differ very little from these Premiums.]

* A person of 30 may secure £1,000 at Death (with profits) by a yearly payment, *during life*, of £20 15s., which would generally elsewhere secure (with profits) **£800** only, instead of **£1,000.** OR he may secure the same sum by 21 payments of £27 13s. 4d.—*being thus free of payment after age* 50.

† At age 40 the Premium *ceasing at* 60 is, for £1,000 (with profits), £33 14s. 2d., being about the same as most Offices require during the whole term of life. *Before these Premiums have ceased the Policy will have shared in at least one division of profits.*

The SOCIETY has taken a leading part in the REMOVAL OF FORFEITURES.

ALL POLICIES (not Seafaring or Military risks, for which special arrangements may be made) are **World-wide** and free from Restrictions on Residence after five-years—provided the Assured has attained the age of 30.

REPORTS, *with* BALANCE-SHEET, TABLES *of* RATES, &c., *may also be had.*

J. MUIR LEITCH, *London Secretary.* JAMES WATSON, *Manager.*

QUEEN'S

THE RETROSPECT OF MEDICINE

A HALF-YEARLY JOURNAL

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

QUEEN'S

EDITED BY

JAMES BRAITHWAITE, M.D. LOND.

OBSTETRIC PHYSICIAN TO THE LEEDS GENERAL INFIRMARY.
LATE LECTURER ON DISEASES OF WOMEN AND CHILDREN, LEEDS SCHOOL OF MEDICINE.
FELLOW AND LATE VICE-PRESIDENT OF THE OBSTETRICAL SOCIETY OF LONDON.
CORRESPONDING FELLOW OF THE GYNÆCOLOGICAL SOCIETY OF BOSTON, U.S.

VOL. XCIX. JANUARY—JUNE, 1889.

(Issued July, 1889.)

LONDON:
SIMPKIN, MARSHALL, AND CO.
EDINBURGH: OLIVER & BOYD. DUBLIN: HODGES, FIGGIS & CO.
AND FANNIN & CO.

THE PRINCE OF TABLE WATERS.

PITKEATHLY

(REGISTERED.)

As a Table Water it has no Rival.

Unlike all other Saline and Aërated Waters, it is not depressing but tonic in its effects, being a natural appetiser.

As a remedial agent in cases of sluggish liver, plethoric states of the system, chronic affections of the organs of respiration and circulation, gastric derangement and biliousness, it has been pronounced by medical men of high authority as most efficacious.

TOWN HALL, LIVERPOOL,
19*th November*, 1885.

Messrs. REID & DONALD, Perth.

Please supply the Mayor of Liverpool, at the Town Hall, with 36 doz. Pitkeathly the same as before.
The Waters are required for a Banquet here on the 25th inst.

THE COUNTY AND CITY CLUB, PERTH,
20*th February*, 1886.

Messrs. REID & DONALD.

Please supply the usual quantity of Potash Water, and a further supply of the Pitkeathly. I find the latter is pleasing very much, and in fact is preferred by members to Apollinaris.

ALEXANDER STARK, *Clubmaster.*

Sold by Chemists, Mineral Water Dealers and Wine Merchants.

London Agents :

Messrs. W. Best & Sons, 22, Henrietta Street, Cavendish Square, W.

Sole Proprietors :

REID & DONALD,

29, GEORGE STREET, PERTH.

WELLCOME HISTORICAL MEDICAL LIBRARY

CONTENTS OF VOL. XCIX.

SYNOPSIS ... ... PAGES 1—130.
(For Contents of Synopsis, see pp. xvii.—xxii.)

Practical Medicine.

GENERAL MEDICINE AND THERAPEUTICS.

ARTICLE.		AUTHOR.	PAGE.
1	On the Relation of Albuminuria to Life Assurance	*Dr. James Tyson*	131
2	Clinical Observations on Pyrodine ...	*Dr. Julius Dreschfeld*	133
3	On Nitrite of Ethyl and its Therapeutic Uses	*Dr. D. J. Leech*	138
4	Influence of Carlsbad Water on Gout...	*Dr. Schuman Le Clerq*	141
5	On the Nature of Pernicious Anæmia	*Dr. William Hunter*	145
6	On Hemorrhage in Salicylism during the Treatment of Acute Rheumatism	*Dr. Lauriston E. Shaw*	147
7	Period of Infection in Scarlet Fever	*Dr. A. Whitelegge*	149
8	On Some Forms of Paralysis after Typhoid Fever	*Dr. George Ross*	150
9	On the Pathological Affinities of Lead and Alcohol	*Norman Porritt, Esq.*	153

DISEASES OF THE NERVOUS SYSTEM.

10	On Syphilitic Disease of the Arteries of the Brain	*Dr. W. R. Gowers*	157
11	On the Prognosis of Syphilitic Affections of the Nervous System ...	*Dr. W. R. Gowers*	163
12	On the Treatment of Syphilitic Affections of the Nervous System ...	*Dr. W. R. Gowers*	167
13	On the Changes in the Peripheral Nerves Induced by Alcohol ...	*Dr. J. F. Payne*	171
14	On the Etiology and Symptoms of Friedreich's Ataxia	*Dr. Crozer Griffith*	175
15	On Erythro-Melalgia—a Vaso-Motor Neurosis of the Extremities ...	*Dr. John E. Morgan*	179
16	On Hysterical Motor Affections of the Vocal Cords	*Dr. James B. Ball*	182
17	On Strychnine as an Antidote in Cases of Narcotic Poisoning	*Dr. G. A. Gibson*	187

DISEASES OF THE ORGANS OF CIRCULATION.

ARTICLE.		AUTHOR.	PAGE.
18	On the Treatment of Valvular Diseases of the Heart	*Dr. J. M. Da Costa*	189
19	On Adonidine in the Treatment of Heart Disease	*Dr. Thomas Oliver*	193
20	On the Cardiac Changes in Chronic Bright's Disease	*Dr. Alfred L. Loomis*	195

DISEASES OF THE ORGANS OF RESPIRATION.

21	On Recurrent Pneumothorax	*Dr. Samuel West*	200
22	On the Treatment of Recent Pleuritic Effusion by the Administration of Saline Cathartics	*Dr. P. Blaikie Smith*	202
23	On Spurious Hemorrhage from the Throat	*Dr. Percy Kidd*	204
24	On Creasote as a Remedy in Phthisis Pulmonalis	*Dr. Beverley Robinson*	207
25	On the Allied Conditions and Treatment of Hay Fever	*Dr. Peter McBride*	210

DISEASES OF THE ORGANS OF DIGESTION.

26	On Glycerine Enemata and Suppositories in Constipation	*Dr. Crozer Griffith*	214
27	On Glycerine Injections in the Diarrhœa and Prolapse of Children ...	*George Rice*, M.B.	217
28	On the Treatment of Peritonitis ...	*Dr. Arthur V. Meigs*	219
29	On the Symptoms and Treatment of Acute Tubercular Peritonitis in the Adult..	*Dr. Samuel Fenwick*	222
30	On Typhlitis, its Nature and Treatment	*Sir Dyce Duckworth*	226
31	On the Different Forms of Peri-Cæcal Inflammation : — Typhlitis Stercoralis ; Perityphlitis ; Appendicitis	*Dr. George J. Preston*	231

DISEASES OF THE URINARY ORGANS.

32	On Intermittent Albuminuria	*Dr. Charles H. Ralfe*	234
33	On the Systematic Examination of the Urine for Albumins in the Urine ...	*Dr. D. Noel Paton*	237
34	On the Relative Value of Opium, Morphine and Codeine in the Treatment of Diabetes	*Dr. Thomas R. Fraser*	239
35	On the Dietetic Treatment of Chronic Bright's Disease	*Dr. Beverley Robinson*	243

Surgery.

AMPUTATIONS, FRACTURES, DISLOCATIONS, AND DISEASES OF THE BONES, JOINTS, ETC.

ARTICLE.		AUTHOR.	PAGE.
36	On an Inexpensive and Efficient Support for the Head in Caries of the Cervical Spine (*with woodcuts*) ...	*Richard Barwell, Esq.*	247
37	On Backward Dislocations of the Fingers upon the Metacarpus ...	*William H. Battle, Esq.*	249
38	A Useful Technique in Removing Tubercular Disease from the Hip Joint (*with woodcut*)	*Arthur E. Barker, Esq.*	252
39	On the American Hip Splint (*with woodcuts*)	*Dr. A. B. Judson*	256
40	On the Football Accident called the "Poop"	*George Wherry, Esq.*	260
41	On the Treatment of Severe Compound Fracture and Dislocation	*Dr. Alexander Ogston*	261
42	On the Operation of Erasion or Arthrectomy of the Knee	*George A. Wright*, M.B.	265
43	On the Causes and Operative Treatment of Club-Foot—Hüter's, Davies-Colley's, and Lund's Operations ...	*Dr. Alexander Ogston*	266
44	The Operative Treatment of Club-Foot: Mode of Operating—Section of Ligaments and Tendons—Dressing—Tarsotomy—Tarsectomy	*Robt. Wm. Parker Esq.*	271
45	On the Treatment of the Three Classes of Cases of Talipes Varus	*Dr. George Buchanan*	275
46	On Two Successful Cases of Partial Excision of the Tarsus for Talipes Equino-Varus	*Dr. F. R. Fairbank*	277
47	On the Causes and Operative Treatment of Flat Foot	*Dr. Alexander Ogston*	279
48	On Some Important Points in Dry Antiseptic Wound Treatment ...	*Jordan Lloyd*, M.B.	281

BRAIN AND NERVOUS SYSTEM.

49	On Traumatic Sub-Dural Abscess of the Brain	*Sir William Stokes*	284

ORGANS OF CIRCULATION.

50	On the Treatment of Nævi by Electrolysis	*Dr. Lewis Marshall*	287
51	On the Value of Electrolysis in Nævus and Angiomatous Tumours ...	*John Duncan*, LL.D.	289

ORGANS OF RESPIRATION.

ARTICLE.		AUTHOR.	PAGE.
52	On the Method of Operating for Tracheotomy in Diphtheria (*with woodcuts*)	*Robert W. Parker, Esq.*	293
53	On the Surgical Treatment of Empyema	*Howard Marsh, Esq.*	296
54	On the Surgical Treatment of Abscess of the Lung and Empyema ...	*T. Pridgin Teale*, F.R.S.	300
55	On the Removal of Naso-Pharyngeal Tumours	*Thos. Annandale, Esq.*	304
56	On the Effects of Nasal Stenosis ...	*E. Cresswell Baber*, M.B.	306
57	The Self-Retaining Palate Retractor—A Recent Improvement in Posterior Rhinoscopy (*with woodcut*) ...	*E. Cresswell Baber*, M.B.	308

ALIMENTARY CANAL.

58	On Inguinal Colotomy for Malignant Disease of the Rectum	*Harrison Cripps, Esq.*	311
59	On Sigmoid Colotomy as a Method of Treatment in Rectal Carcinoma ...	*Thos. F. Chavasse, Esq.*	315
60	The Diagnostic Value of "Ballooning of the Rectum" in Cases of Stricture of the Bowel	*Thomas Bryant, Esq.*	319
61	On the General Principles of Operative Treatment of Fistula-in-Ano ...	*Dr. Charles B. Kelsey*	320
62	On the Blind Internal Fistula-in-Ano	*Dr. Charles B. Kelsey*	323
63	On the Treatment of Piles by Injection	*Swinford Edwards Esq.*	325
64	On the Treatment of Piles by Ligature	*Dr. Joseph M. Mathews*	328
65	On Hernia of the Sub-Peritoneal Fat	*James Hardie, Esq.*	330
66	The Bidet or Cold Douche in Affections of the Lower Bowel and Genito-Urinary Systems	*Dr. J. William White*	333

ORGANS OF URINE AND GENERATION.

67	On Retention of Urine in Old Persons	*Christopher Heath, Esq.*	335
68	On Operative Procedures in Hypertrophy of the Prostate	*Dr. R. D. Webb*	337
69	Case of Suppression of Urine Treated by Removal of an Impacted Calculus from the Ureter by Operation ...	*F. W. Kirkham, Esq.*	341
70	On the Treatment of Tight Urethral Strictures	*Reginald Harrison Esq.*	342
71	On Suture of the Urethra in Cases of Perineal Section	*Marmoduke Sheild Esq.*	347
72	On a New Method for the Radical Cure of Varicocele	*W. H. Bennett, Esq.*	348

AFFECTIONS OF THE SKIN, ETC.

ARTICLE.		AUTHOR.	PAGE.
73	On the Employment of Alkalies in the Treatment of Eczema	*Dr. Frederick Pearse*	351
74	On an Anomalous Form of Eczema ...	*Dr. E. D. Mapother*	354
75	A Description of Lichen Ruber ...	*Dr. R. W. Taylor*	355
76	On Cases of Typical Impetigo Simplex	*Dr. Louis Duhring*	359
77	On a Case of Dermatitis Tuberosa due to the Administration of Iodine Compounds	*Dr. J. Nevins Hyde*	361

AFFECTIONS OF THE EYE AND EAR.

78	On the Remote Effects of Suppurative Otitis	*Sir Dyce Duckworth*	365
79	On the Diagnosis and Treatment of Ocular Headaches	*Walter H. Jessop*, M.B.	368
80	On the Influence of the Discovery of Cocaine upon Ophthalmic Surgery	*Dr. Samuel Theobald*	370
81	On the Dangers of Septic Infection arising from Nasal and Aural Discharges in Midwifery and Surgical Practice	*Bendelack Hewetson, Esq.*	372

Midwifery,

AND THE DISEASES OF WOMEN, ETC.

82	On the Preventive Treatment of Intra-Uterine Death	*Professor Simpson*	375
83	On Obstructive Dysmenorrhœa and Sterility	*Dr. J. Halliday Croom*	377
84	On the Action of Certain Drugs on the Pregnant Uterus	*Dr. Lombe Atthill*	381
85	On the Management of the Third Stage of Labour	*Dr. D. Berry Hart*	383
86	On Adherent Placenta and its Treatment	*Dr. D. Berry Hart*	384
87	On Ventral Fixation of the Uterus for Intractable Prolapse	*Dr. John Phillips*	386

Midwifery, &c., continued.

ARTICLE.		AUTHOR.	PAGE.
88	On Puerperal Fever—a Preventable Disease	*Dr. C. J. Cullingworth*	390
89	On a New Operation for Vesico-Uterine Fistula	*Dr. Francis Champneys*	393
90	On Extirpation of the Uterus for Malignant Disease (*with diagrams*)	*Sir T. Spencer Wells*	395
91	On Rotation of Ovarian Tumours ...	*Knowsley Thornton*, M.B.	398
92	On Transfusion of the Normal Saline Solution	*Walter H. Brown, Esq.*	401
93	On Improved Cæsarean Section ...	*Dr. H. J. Garrigues*	402
94	On the Removal of Carcinoma of the Breast	*Dr. Samuel W. Gross*	405
95	On Rapid Dilatation of the Cervix Uteri (*with woodcut*)	*Dr. Alexander Duke*	409
96	New Spiral-Wire Stem for Preserving the Patency of the Cervical Canal after the Operation for Stenosis (*with woodcut*)	*Dr. Alexander Duke*	411

Addenda.

98	On Some Further Improvements in the Treatment of Malignant Stricture of the Œsophagus by Tubage (*with woodcuts*)	*Dr. Charters J. Symonds*	413
99	On the Mechanical Treatment of Malignant Stricture of the Œsophagus ...	*Dr. Charters J. Symonds*	417

NEW DRUGS AND FOOD STUFFS.

Synopsis Contents.

SYNOPSIS	AUTHOR.	PAGE.
On a Case of Acromegaly...	*Dr. O. Fraentzel*	1
Action of Antipyrin in Acute Rheumatism ...	*Dr. Theodore Cash*	1
On the Formation of Subcutaneous Nodules in Acute Rheumatism	*Lindmann*	2
Antifebrin, its Uses, Doses, and Advantages ...	*Dr. Theodore Cash*	3
Antipyrin, its Mode of Administration	*Ditto*	4
Use of Antipyrin in Fever, and its Disadvantages ...	*Ditto*	4
Action of Antipyrin on the Urinary Secretion ...	*Ditto*	5
Subcutaneous Anæsthetic Action of Antipyrin ...	*Ditto*	5
Painless Subcutaneous Use of Antipyrin	*Mr. H. de Fougeray*	6
Chronic Alcoholism as a Cause of Liver and Kidney Disease	*Dr. Dickinson*	6
Case of Recovery from Poisoning by Cocaine ...	*Dr. Moizard*	7
On a New Method of Mixed Narcosis by Cocaine and Chloroform	*Professor Obalinski*	8
Formulæ for the Administration of Creasote ...	*Dr. Keferstein*	9
On the Use of Creolin as a Germicide	*Professor Winkel*	9
Use of Creolin in Diseases of the Throat and Nose ...	*Thérap. Monatsh.*	10
Egg Albumen Solution as a Diet in Fevers... ...	*Dr. H. Salzer*	10
Results of Electrolysis in the Treatment of Goitre...	*John Duncan, Esq.*	11
On the Use of Strophanthus in Graves's Disease ...	*Dr. D. R. Brower*	11
On the Local Anæsthetic Action of Helleborine ...	*MM. Vittovia and Elvidio*	12
Hypodermic Syringes, how to keep them Clean ...	*Münch. Med. Woch.*	12
On the Treatment of Ingrowing Toe-Nail	*Hofmann*	12
Use of Tinfoil in Ingrowing Toe-Nail	*Dr. Theodor Clemens*	13
On Iron Preparations in the Diseases of Children ...	*Dr. H. Gillet*	13
Hypodermic Morphia, the Best Preparation to Inject	*Dr. E. O. Daly*	14
The Initial Dose in Hypodermic Use of Morphia ...	*Ditto*	15
On the Occurrence of Pyrexia, Shiverings, and Pyæmia in Malignant Disease	*Dr. Finlayson*	15
On Sterilization of Milk at the time of Milking ...	*Raudnitz*	15
On Myrtol as a Disinfectant for the Air-passages ...	*Professor Eichhorst*	16
On Nitrite of Ethyl Solution as a Substitute for Spirit of Nitrous Ether	*Dr. D. J. Leech*	16
A Useful Menstruum for Oily Mixtures	*Bull. de Thérapeutique*	17
On Changes in the Liver in Pernicious Anæmia ...	*Dr. Hunter*	17
Conclusions as to the Nature of Pernicious Anæmia	*Ditto*	17
On the Use of Phenacetin as an Antipyretic	*Dr. Friedrich Müller*	18
On the Value of Phenacetin as an Analgesic ...	*Dr. Dujardin Beaumetz*	19
Results of the Investigation of Pyrodine	*Dr. Julius Dreschfeld*	19
On the Toxic Action of Pyrodine	*Ditto*	20

SYNOPSIS.	AUTHOR.	PAGE.
On an Unusual Effect of Salicylate of Soda ...	*Drs. Gilpin and Felkin*	20
On the Use of Oxygen in Scarlet Fever	*Dr. Astley Gresswell*	21
On the Diuretic Action of Strophanthus	*M. Lemoine*	22
On the Therapeutic Use of long-continued Small Doses of Sulphur	*Sir A. B. Garrod*	22
Surgical Treatment of Perforating Typhoid Ulcer ...	*Dr. J. Ewing Mears*	23
On the Diagnostic Value of Accidental Rashes in Typhoid Fever	*Dr. J. W. Moore*	24
On the Employment of Digitalis in Typhoid Fever ...	*Dr. Joseph Leidy, Jun.*	25
Diet in the Stage of Convalescence in Typhoid Fever	*Dr. William Ord*	26
On Typhoid Fever in Infancy	*Dr. M. J. Keating*	26

Amenorrhœa in Alcoholic Paralysis	*Dr. Thos. Buzzard*	27
Argyll-Robertson Pupil, an Evidence of Syphilitic Taint	*Dr. W. R. Gowers*	27
On Traumatic Subdural Abscess of the Brain ...	*Sir William Stokes*	27
On Syphilitic Disease of Cerebral Arteries	*Dr. W. R. Gowers*	28
On the Etiology and Pathology of Chorea	*Dr. Handford*	29
Definition of Friedreich's Ataxia	*Dr. Crozer Griffith*	29
Diagnosis of Friedreich's Ataxia	*Ditto*	30
Treatment of Hysterical Laryngeal Affections ...	*Dr. James B. Ball*	30
Strychnine Hypodermically in Narcotic Poisoning ...	*Dr. G. A. Gibson*	31
A Successful Case of Nerve Grafting	*A. Mayo Robson, Esq.*	32
Chloride of Methyl Spray in Neuralgia (*with woodcut*)	*Dr. Debove*	33
Subcutaneous Injection of Strychnine in Paralysis ...	*Dr. J. F. Goodhart*	34
On Conditions associated with Peripheral Neuritis ...	*MM. Joffroy and Achard*	35
On Syphilis as a Cause of Peripheral Neuritis ...	*Dr. W. R. Gowers*	36
On Persisting Aptyalism (Persistent Dry Mouth) ...	*Jonathan Hutchinson, Esq.*	36
On Sulphonal—a new Hypnotic	*Kast and Rabbas*	37
On the Administration of Sulphonal	*Lovegrove, Kast*	38
Sulphonal in the Insomnia of Mental Disorders ...	*A. Cramer, Rabbas*	39
Case of Poisoning by Sulphonal	*Dr. Bornemann*	39
Syphilitic Diseases of the Nervous System—Prognosis	*Dr. W. R. Gowers*	40
Ditto Cautions to be observed in Treating	*Ditto*	40
Syphilitic History in Cases of Tabes Dorsalis ...	*Ditto*	41
Treatment of Tabes Dorsalis by Suspension ...	*M. Charcot*	42
Case of Tabes Dorsalis Treated by Suspension ...	*Dr. de Watteville*	43

On the Nature and Treatment of Angina Pectoris ...	*Dr. G. A. Gibson*	44
Combinations and Double Salts of Caffeine... ...	*Dr. Da Costa*	45
Value of the Substitutes for Digitalis	*Ditto*	45
On Cardiac Asthma	*Dr. Fraenkel*	46
On the Management of Cardiac Dilatation ...	*Dr. Alfred L. Loomis*	47
Oil of Turpentine as a Styptic in Epistaxis ...	*Ernyei*	47
On the Therapeutic Treatment of Heart Disease ...	*Dr. Da Costa*	47
Use of Chloride of Barium in Heart Disease ...	*Ditto*	48

SYNOPSIS.	AUTHOR.	PAGE.
On the State of the Urine in Heart Disease ...	*Dr. Da Costa*	49
Gastro-Enteritis as a Cause of Death in Heart Disease	*Dr. Thomas Oliver*	49
On the Employment of Electrolysis in Nævus ...	*John Duncan, Esq.*	50
Method of Using Electrolysis in Nævus	*Dr. Lewis Marshall*	50
On the Diagnosis of Pericarditis	*M. Puis*	51
Aspiration and Drainage in Purulent Pericarditis ...	*Dr. Dickinson*	51

Inhalation of Camphor Vapour in Acute Coryza ...	*Schweizer Wochens.*	52
Relation of Acute Tonsillitis to Acute Rheumatism	*Dr. Christopher Lewis*	52
Treatment of Acute Tonsillitis by Incision ...	*Ditto*	53
Treatment of Adenoid Disease of the Naso-Pharynx	*E. Cresswell Baber*, M.B.	54
Treatment of Common Catarrhal Headache ...	*Dr. R. W. Seiss*	55
On Membranous Croup and Diphtheria	*Dr. Ranke*	55
On Loss of the Knee-Jerk in Diphtheria	*Dr. W. B. Hadden*	56
On Local Measures of Treatment in Diphtheria ...	*Robert W. Parker, Esq.*	56
On the Employment of Mercury in Diphtheria ...	*Dr. Abraham Jacobi*	57
On the Treatment of Diphtheria by Gallic Acid and Glycerine	*Hoyer*	58
Treatment of Diphtheria by Menthol	*Cholewa*	59
Salicylate of Soda and Caffeine in Lung Diseases ...	*Ye Gempt*	59
Use of Galvano-Cautery in Enlarged Tonsils ...	*Dr. J. W. Gleitsmann*	60
Treatment of Enlarged Tonsils by Ignipuncture ...	*Dr. William Roth*	60
A New Way of Raising the Epiglottis in Asphyxia ...	*Dr. Benjamin Howard*	61
On the Use of Nasal Bougies in Hay Fever, &c. ...	*Dr. H. C. Wood*	64
On Removal of Nasal Polypi by the Snare ...	*E. Cresswell Baber*, M.B.	65
On the Treatment of Ozæna by Naphthol	*Dr. Rualt*	65
Treatment of Pulmonary Phthisis by Creasote ...	*Dr. Beverley Robinson*	66
Creasote Inhalations in Cases of Pulmonary Phthisis	*Dr. Austin Flint*	66
Treatment of Phthisis by Calomel	*Dochmann*	67
Inhalation of Fluoric Acid Vapour in Phthisis ...	*Herard, Jajarvay, Goetz*	67
Treatment of Tubercular Laryngitis by Menthol ...	*Rosenberg*	69
Curetting and Lactic Acid in Tubercular Laryngitis	*Dr. Keimer*	69
The Abortive Treatment of Whooping Cough ...	*Dr. Mohn*	69

Administration of Aconite in Acute Dysentery ..	*Dr. Beatson*	69
Description of Acute Red Atrophy of the Liver ...	*Dr. J. Frank Payne*	69
On the Rapid Cure of Anal Fistula	*Dr. Longo*	70
Correct Diagnosis of Blind Internal Fistula-in-Ano...	*Dr. Chas. B. Kelsey*	71
Rules in Operating for Fistula-in-Ano	*Dr. Chas. B. Kelsey*	71
Diagnosis in a Case of Carcinoma of Pancreas ...	*Dr. C. W. Suckling*	72
Successful Operation of Cholecystenterostomy ...	*Professor Socin*	72
Chronic Diseases of Alimentary Canal and Liver treated by the Compound Sulphur Lozenge ...	*Sir Alfred B. Garrod*	73
On the Curability of Cirrhosis of the Liver... ...	*Dr. Millard*	75
Cirrhosis of Liver treated by Calomel and Digitalis...	*Dr. Schwass*	75
On the Operation of Colectomy for Malignant Disease	*Dr. Kendal Franks*	76

SYNOPSIS	AUTHOR.	PAGE.
A Supplement to the Operation of Inguinal Colotomy	*Herbert Allingham, Esq.*	77
Results of the Operation of Sigmoid Colotomy ...	*Thomas F.Chavasse,Esq.*	78
Bismuth Salicylate in Digestive Disorders of Children	*Dr. Ehring*	79
On the Treatment of Dilatation of the Stomach ...	*Professor Ott*	79
On Internal Electrical Treatment in Dilatation of the Stomach	*Dr. Baraduc*	80
Statistics of Operations on the Gall Bladder ...	*Dr. A. Depage*	81
Method of Preparing Glycerine Suppositories ...	*Dietrich*	81
On the Employment of Glycerine Suppositories for Constipation	*Dr. Crozer Griffith*	81
On the Treatment of Hemorrhoids, Prolapse, &c., by the Cold Douche	*Dr. J. W. White*	82
On Hernia into the Foramen of Winslow	*Frederick Treves, Esq.*	83
Successful Resection of Umbilical Hernia	*Dr. J. M. Cotterill*	83
On Surgical Treatment of Hydatid of Liver ...	*Henry Morris, Esq.*	84
On Icterus Neonatorum, and its Relation to Sepsis...	*Dr. Underhill*	85
Use of Pilocarpin in Persistent Jaundice	*Dr. J. F. Goodhart*	86
On Milk Jelly as a Variation in Milk Diet	*Professor Liebreich*	86
Use of Paraldehyde in Obstinate Vomiting ...	*Dr. La Mour*	87
A Mixture for Oxyuris Vermicularis	*Medical News*	87
Clay-coloured Stools and Disease of Pancreas ...	*Dr. J. J. Walker*	87
On the Treatment of Peritonitis	*Dr. Arthur V. Meigs*	88
Ditto ditto	*Dr. J. M. Baldy*	88
On the Use of Purgatives in Peritonitis	*Dr. Arthur V. Meigs*	89
Condition of the Tongue in Tubercular Peritonitis ...	*Dr. Samuel Fenwick*	89
Clinical Characters of Acute Tubercular Peritonitis	*Ditto*	90
Diagnosis of Acute Tubercular Peritonitis... ...	*Ditto*	90
Ulceration of Tongue and Mouth Cured by Opium ...	*Marmaduke Sheild, Esq.*	91
Acetonuria and its Relation to Diabetic Coma ...	*Dr. Samuel West*	92
Albumen in Urine—Quantitative Estimation of ...	*H. Zahor*	93
Dilatation and Carbolic Acid in Cystitis in Women	*Dr. T. More Madden*	94
On the Use of Codeine in Diabetes	*Dr. Thomas R. Fraser*	94
Juice of Juniper as a Diuretic for Children ...	*Dr. Goldschmid*	95
Case of Fatty Tumour of the Scrotum	*Jonathan Hutchinson, Esq.*	95
Recipes for Gluten Bread for Diabetics	*Dr. Woltering*	95
On Intermittent and Latent Albuminuria	*Dr. George Johnson*	96
On Intermittent Functional Albuminuria	*Dr. Charles H. Ralfe*	98
On Intermittent Hydronephrosis	*Dr. Leopold Landau*	98
On a Truss for Moveable Kidney	*Dr. Niehans*	99
On the Cardiac Changes in Renal Disease	*Dr. Alfred L. Loomis*	100
Treatment of Retention of Urine in Females ...	*Christopher Heath, Esq.*	101
On the Detection of Sugar in the Urine	*Dietetic Gazette*	101
The Transverse Incision in Supra-pubic Cystotomy	*Dr. Gerster*	102
Non-effect of Electricity in Urethral Stricture ...	*Dr. E. S. Keyes*	102
Treatment of Ordinary Cases of Varicocele... ...	*W. H. Bennett, Esq.*	102
The Causation of Vulvo-Vaginitis in Children ...	*Pott, Sanger, &c.*	103
Whalebone Bougies for Tight Strictures	*Reginald Harrison, Esq.*	103

SYNOPSIS.	AUTHOR.	PAGE.
Treatment of Anterior Metatarsalgia	*Dr. Auguste Polloson*	104
On the Treatment of Club-Foot	*Professor Ogston*	104
Treatment of Pains in the Region of Coccyx ...	*Ménière*	106
Removal of Bone in Compound Fractures	*Professor Ogston*	106
Kocher's Method in Dislocation of Shoulder ...	*Dr. C. A. Powers*	107
Excision of Bone to Promote Healing of Wounds or Ulcers, or relieve Cicatricial Contractions ...	*Professor Annandale*	107
On Primary Union after Excision of Tubercular Hip-Joint	*Bilton Pollard, Esq.*	108
Hemorrhage from Ear in Fracture of Base of Skull	*Dr. Charles D. Bennett*	108
Aids to Early Diagnosis in Hip Disease	*Dr. A. B. Judson*	108
Syphilitic Disease of the Knee-Joint	*Jon. Hutchinson, Jun.*	109
On the General Treatment of Rickets	*Dr. W. B. Cheadle*	110
Sterilized Hot Water in Surgical Operations ...	*Arthur E. Barker, Esq.*	111
Lassar and Oesterricher's Treatment of Acne ...	*Dr. Isaac*	112
On 142 Cases of Alopecia Areata	*Dr. H. Leloir*	112
On the Treatment of Alopecia Areata	*Dr. O. Lassar*	113
The Local Treatment of Alopecia Areata	*Dr. L. D. Bulkley*	113
Treatment of Corns, Callosities, Warts, &c. ...	*Roesen*	114
To Remove Corns, or Callosities from the Sole ..	*Dr. P. G. Unna*	114
Description of Crateriform Ulcer of the Face ...	*Jonathan Hutchinson, Esq.*	114
On the Treatment of Eczema	*Dr. Veiel*	115
Definition of Local Eczemas	*Malcolm Morris, Esq.*	116
Treatment of Eczema of Anus and Genitals ...	*Lustgarten*	116
Pomade for Eczema of the Hands	*L'Union Médicale*	116
Treatment of Infantile Eczema	*Boeck*	116
Use of Chromic Acid in Excessive Sweating ...	*Medical Press*	116
A Simple Method of Treating Erysipelas	*Nussbaum*	117
Use of Papayotin in Fissures of the Tongue ...	*Schwimmer*	117
An Ointment for Furuncles	*L'Union Médicale*	117
The Treatment of Grouped Comedones	*Dr. George Thin*	117
Use of Hydroxylamin in Skin Diseases	*Dr. Eichoff*	117
Iodine Eruptions—A Pure and Simple Dermatitis ...	*Dr. R. W. Taylor*	118
Use of Naphthol in the Treatment of Itch	*Dr. Kaposi*	118
Lanolin and Boric Acid in Skin Disease of Children	*Dr. Russell Sturgis*	118
On the Treatment of Leukoplakia Buccalis ...	*Dr. P. G. Unna*	118
Auxiliary Treatment of Lupus	*Ditto*	119
Employment of Chromic Acid in Hypertrophied Nasal Mucous Membrane	*Dr. R. W. Seiss*	119
Lassar, Unna, and Gruendler's Pastes for Eczema, &c.	*Dr. Alex. Jamieson*	119
Application of Ether Spray in Pediculi Pubis ...	*Medical News*	120
Pemphigus Pruriginosus cured by Carbolised Water	*Secretan*	120
Pemphigus Vegetans (Neumann)—Case of ...	*Dr. Radcliffe Crocker*	120
Treatment of Post-Eczematous Furunculosis ...	*Dr. P. G. Unna*	121
An Application for Pruritus	*Therap. Monatschefte*	121
Employment of Menthol in Pruritic Affections ...	*Dr. E. Saalfeld*	121

SYNOPSIS.	AUTHOR.	PAGE.
On the Treatment of Psoriasis	*Dr. Alex. Jamieson*	121
On the Treatment of Ringworm of the Scalp ...	*Dr. George Thin*	121
A Prophylactic Pomade for Ringworm	*Dr. A. J. Harrison*	122
A Parasiticide Application for Ringworm... ...	*Ditto*	122
On the Employment of Salol in Skin Affections ...	*Dr. Edmund Saalfeld*	122
An Ointment for Seborrhœa Sicca of the Scalp ...	*M. Vidal*	122
On Struma, Scrofula, and Tuberculosis	*Dr. H. Leloir*	123
On Sycosis and its Treatment	*Dr. P. G. Unna*	123
On the Use of Cocaine in the Treatment of Ulcers ...	*E. N. Nason*, M.B.	123
Cautions on Treatment of Foreign Bodies in the Ear	*Dr. A. Marian*	124
Carbolic Acid Glycerine in Hyperæmia of Tympanum	*Dr. Morpurgo*	124
Labyrinthine Deafness Treated by Pilocarpine ...	*George P. Field, Esq.*	124
On Amputation of the Pregnant Uterus	*Lawson Tait, Esq.*	124
On the Methods of Craniotomy	*Dr. Archibald Donald*	125
On Eclampsia and Albuminuria	*Dr. Santos*	126
Dr. Duke's Spiral Wire Stems in Chronic Endometritis	*Dr. Alex. Duke*	126
Statistics of Operation for Extirpation of Uterus ...	*Sir T. Spencer Wells*	127
On the Value of Hysterorrhaphy	*Dr. William Lee*	127
On the Rotation of Ovarian Tumours	*Knowsley Thornton*, M.B.	128
On the Position of Pelvic Tumours	*Lawson Tait, Esq.*	128
On the Value of Pilocarpine in Pregnancy, Labour, and the Lying-in State	*Dr. John Phillips*	128
Pilocarpine in Puerperal Convulsions—a Warning ...	*Ditto*	128
On the Treatment of Puerperal Anæmia by Arsenic	*Dr. William Osler*	129
On Management of the Third Stage of Labour ...	*Dr. D. Berry Hart*	129
On the Adoption of Trendelenburg's Posture in Gynæcological Examinations	*Mendes de Leon*	129
A New Operation for Vesico-Uterine Fistula ...	*Dr. F. H. Champneys*	129
On the Treatment of Vomiting in Pregnancy ...	*Hennig, Sänger, Günther*	130

INDEX TO VOLUME.

QUEEN ST. DISPENSARY

Synopsis.

AN ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THIS VOLUME, WITH OTHER SHORT ARTICLES FROM THE MEDICAL JOURNALS, SHOWING THE MOST IMPORTANT INDICATIONS OF TREATMENT, PUBLISHED BY DIFFERENT WRITERS DURING THE HALF-YEAR.

ARRANGED ALPHABETICALLY.

GENERAL MEDICINE AND THERAPEUTICS.

ACROMEGALY.—(O. FRAENTZEL, *Deutsch. Med. Wochenschr.*, 1888.) Fraentzel reports another instance of this disorder occurring in a male patient fifty-eight years of age, who died of phthisis. While still a boy his extremities attained such a size that every one noticed them; and when desiring to choose an occupation his hands were so large that he became a wheelwright, being unfitted for any more delicate trade. At the age of twenty cough developed, and at about the same time there was noticed a well-marked polydipsia, which continued through life. He consumed large quantities of spirits, and when unable to obtain this after entering the hospital, drank daily several litres of water instead. There was never any excessive hunger. The urine contained neither albumin nor sugar. Examination of the patient showed a decided overgrowth of the bones and soft parts of the face and terminal portions of the limbs. The nose, lower jaw, lips, and cheeks, were strikingly large; the distal portions of the forearms thick, the bones of the hands and feet large, thick, and widely separated, while the soft parts were swollen and doughy. There was no enlargement of the thyroid gland, and no dulness over the manubrium of the sternum.—A daughter of this patient, aged eleven years, exhibits an enlargement of the hands and feet, which is clearly the beginning of the same condition shown by the father. Her face has still a normal appearance. No other instance of the disease can be found in the family. The author details the careful measurements made of the overgrown parts at the autopsy, and describes the conditions of the organs. It is particularly to be noted that there were no remnants of the thymus gland, the thyroid gland was normal, and there was a scarcely noteworthy increase in the size of the hypophysis cerebri. (American Journal of Med. Science, Jan., p. 69.)

ACUTE RHEUMATISM.—Antipyrin.—(*See also* "*Antipyrin.*") Its action in acute rheumatism has been carefully watched, and contrasted with that of salicylate of sodium. No doubt antipyrin reduces the temperature, but it does not materially alter the course

of the disease, nor hinder its recurrence; and it does not avert the danger of intercurrent cardiac complications. In spite of the opinion of Fränkel, then, we cannot accept this drug as a specific in acute rheumatism. Lenhartz admits that it shows no greater power in hindering the occurrence of inflammatory cardiac complications than the salicylic preparations. Neumann concludes that its action is very comparable to salicylate of sodium in acute rheumatism, but it has no special advantage over the latter; it is, however, worth trying as an alternative when the salicylate of sodium has failed, inasmuch as the one may benefit when the other has not done so; but we know of no indication which will enable one beforehand to say whether the salicylate of sodium or the antipyrin will act better. (Dr. Theodore Cash, British Medical Journal, Nov. 3, p. 977.)

Acute Rheumatism.—Formation of Subcutaneous Nodules in. Lindmann (*Deutsch. Med. Wochen.*) reports two interesting cases, one in an adult, the other in a child, in which during the course of articular rheumatism numerous widespread nodules rapidly developed, with an increase of some of the rheumatic symptoms. The nodules were hard, somewhat painful, of the size of a pea or bean and movable under the skin, which was not reddened over them. As the patient recovered from the rheumatism the nodules disappeared. The author then makes a thorough review of the literature of the subject, and collects from it fifty-nine undoubted cases, of which most were females, and forty-six were children. The development of chorea or of affection of the heart has often been observed simultaneously with that of the nodules. The latter usually appear suddenly in the later periods of the rheumatic affection, vary in size from that of a pin-head to that of an almond, may be symmetrically situated and persist from a few days to several months, but usually about three weeks. The microscopical examinations which have been made show the nodules to be composed of newly-formed connective tissue of an inflammatory type. It is possible that they are of embolic origin with the presence of microbes, analogous to the vegetations on the valvular leaflets. Their diagnosis should offer no difficulty. Rheumatic urticaria and circumscribed œdema are situated *in* the skin, and the nodules are in other respects quite different from these, as they are from the subclavicular pseudo-lipoma of Potain and Verneuil. They may most easily be confounded with gummata, which, however, become rapidly attached to the skin, grow larger, soften and often ulcerate; while the periosteal gummata soon assume a periosteal wall. The nodules have sometimes a diagnostic value, in that they may be the last sign of a slight and forgotten rheumatism. In such cases they give positive information concerning the nature of a chorea or an affection of the heart. Treatment is seldom required. (American Journal of the Medical Sciences, Oct., p. 405.)

ANTIFEBRIN.—Its Use in Various Pyretic Affections; Doses; and its Advantages over Antipyrin.

The action of antifebrin in carefully selected cases is highly satisfactory. Faust, in describing the result of its employment in seventy-two cases of pyrexia, says that it never left him in the lurch. The higher the fever, the greater the fall it induces. Widowitz points out its peculiarly steady and safe action in children up to four years of age, or of twice or thrice the amount in those older. The temperature begins to fall in the rectum in from ten to twenty minutes. These small doses appear to be amply sufficient, and it is worth bearing in mind that in ill-nourished children a small dose produces a much greater effect than in the well-nourished. The various pyretic affections which would appear to indicate the administration of antifebrin, but which derive the least benefit from it, are scarlet fever and erysipelas. The pyrexia of measles, on the other hand, is benefited by it, and in cases of intercurrent pneumonia the drug may be given with marked advantage. In pyrexia of phthisis its record is satisfactory, the more so as it can be administered for many weeks together without losing its action, and without inducing any disorder of the digestion. Small doses are frequently sufficient for the purpose of reducing the temperature in phthisis. Stachiewitz, who has used it extensively, especially advocates small doses in the emaciated and weak. He finds that in such cases 1 or 2 grains will effect a marked defervescence lasting six to eight hours, whilst larger doses are apt to cause diaphoresis and rigors. In patients in whom the disease is recent and progressive, and the general condition good, he gives 3 to 7 grains without hesitation. His experience of the drug leads him to the conclusion that antifebrin is far above all other antipyretics, and that if carefully administered it has no drawback. The exhaustion which may follow a large dose, especially in very febrile cases, is clearly an indication for the reduction of the amount, but the favourable effect on the temperature will still be obtained. In typhoid it cuts down the evening exacerbations of temperature promptly, and appears to act favourably upon the course of the case. In acute rheumatism it is effectual as an antipyretic, but in combating the progress of the disease it can scarcely be placed on an equality with salicylic acid. I have said already that as an antipyretic, antifebrin has marked advantages over antipyrin. These advantages are: (1) the smaller dose in which it is operative; (2) the steadier and more continued action; (3) its comparative freedom from the danger of causing collapse; (4) it is much cheaper, as it is purchasable in the open market, whilst antipyrin is not so. Against it we have merely its insolubility. This is readily overcome by prescribing it together with some pleasant tincture, as the tinct. aurantii. (Dr. Theodore Cash, British Medical Journal, Nov. 3, p. 979.)

ANTIPYRIN.—Its Mode of Administration as an Antipyretic. It is probable that one grain, thrice daily, produces as favourable a defervescence as much larger doses, if we give it at the right time—that is to say, at the time of tendency to recurrence of pyrexia or at its remission. In the pyrexia of phthisis, its antipyretic action is perhaps as reliable as it is in the treatment of any disease. In the hands of many physicians, it has even done more than quinine, but probably here also much depends on its manner of administration. Daremberg gives fifteen grains, and repeats the dose if the temperature rises 0.3° C. in the succeeding hour; but Ardun finds that three to five grains is a sufficiently large dose for most cases. This should reduce from 1° to 1.5° C., and a second dose 0.5° to 1° C., the temperature remaining down from eight to nine hours. In the pyrexia of malarial fever, Dr. Barr found it greatly inferior to antifebrin. When antipyrin was given, in cases in which the temperature was 105° F., he found that a fall commenced in about one hour; that the minimal reduction caused was 3° F., and this was reached in two hours. After which a rapid rise took place. The diaphoresis caused was great, and he experienced considerable *malaise* subsequently. With antifebrin the temperature also fell, but the action, if slower in commencing, was much more prolonged. No *malaise* was induced; diuresis took the place of diaphoresis. The pulse was strengthened, and a feeling of well-being, altogether foreign to the action of antipyrin, was occasioned. (Dr. Theodore Cash, Ibid., p. 978.)

Antipyrin.—Use in Febrile States, and its Disadvantages. We cannot conclude that, because antipyrin reduces most febrile temperatures, it is applicable in all cases of fever; far from it. Clinical experience, which is very ample in its records with regard to this drug, shows that its sphere of action, when considered as a fever-reducing agency, is limited, and that in cases which otherwise indicate its administration it has certain drawbacks which must be kept in mind. Derangement of the stomach is not one of these, or only exceptionally so. Other physicians besides Daremberg have given antipyrin in quantities of 4 to 6 grammes in the twenty-four hours for weeks together without witnessing vomiting or marked disorder of the stomach. The chief and most serious drawback to the drug is its tendency to cause collapse, owing to its ultimate action upon the heart. This collapse may develop itself after moderate doses in adults, apparently as the result of no very uncommon idiosyncrasy. Strauss saw collapse after 5 grammes, in divided doses of 2, 2, and 1 gramme. Children are peculiarly liable to develop this condition even after as small a dose as 5 grains. Antipyrin is, therefore, a drug to be administered with caution at all times, and should seldom, if ever, be left in the hands of the patient to use at discretion when full doses have been ordered. Continued doses, and even the administration of a single small dose

in some instances, may cause the development of an exanthematous rash; but, though this may be annoying to the patient, it is no serious drawback; it seems frequently to indicate, however, a temporary discontinuance of the drug. As a means of reducing the temperature, we find antipyrin of least value in fevers occurring as concomitants of suppuration. The record in scarlet fever and in diphtheria is against it, and none the less so that its tendency to cause collapse is increased in these diseases. In the infectious diseases, as a class, Bungeroth warns against its methodic use. In measles, it has been found, however, more reliable. (Dr. Theodore Cash, Ibid, p. 977.)

Antipyrin.—Its Action upon the Urinary Excretion.

The action of antipyrin upon urinary excretion is marked. The nitrogenous elimination is greatly reduced; and this is not merely in conditions of disease, but it has been recorded by Jacubovitsch in the case of healthy as well as of feverish children to whom antipyrin had been given. The inorganic salts, sulphates, phosphates, etc., are markedly diminished. After discontinuance of the drug, however, all these constituents appear to be increased even relatively to the time anterior to the administration of the drug. Metabolism seems to be held in check by antipyrin, sometimes to a remarkable extent. In cases of typhoid fever, also, Riess showed by a series of very careful observations that excretion of urea is greatly diminished. Not only are the solid constituents of the urine decreased, the water is also diminished. This diminution is even greater than we should anticipate from the diaphoretic effect of the drug. In the therapeutical employment of antipyrin it is well to bear in mind that contra-indications of its use may arise when renal disease coexists with the affection, whether painful or pyretic, for which the drug is given even when the kidneys are healthy, but if it is of primary importance that their freedom of action should proceed unrestrained, the drug must be given with some hesitation. It seems not improbable that a case of death occurring after the eighth administration of a one-gramme dose, recorded by M. Hardy, may have been owing to a coexistence of extensive renal disease. Diabetes appears in nowise to contraindicate. The drug has even been employed in the treatment of this affection, and apparently with satisfactory result. In one case recorded by Gönner a daily administration of three grammes for nine consecutive days altogether abolished the sugar from the urine. (Dr. Theodore Cash, Ibid, p. 977.)

Antipyrin.—Local Anæsthetic Action of Subcutaneously.

Wolfe (*Ther. Monhft.* June, 1888, p. 279) attributes to antipyrin a *local* action over pain equal if not surpassing that of morphia. In acute rheumatism, an injection in the neighbourhood of the affected joint relieved the pain in three to five minutes, so that—e.g., the patient could without pain raise an arm that was previously help-

less. The chest pains of phthisis he saw relieved in five minutes and permanently, and the stabbing pains of pleurisy, etc., so assuaged in a few minutes that a satisfactory examination, previously interfered with by the shallow breathing, was made possible. In muscular rheumatism, in a large series of cases, the pain disappeared after a few minutes, either not to return at all or in a much more moderate degree. We believe that it would be useful for purposes of exact diagnosis in all painful examinations—e.g., fresh fractures; likewise in neuralgias of superficial nerves and in asthmatic attacks the results were extremely satisfactory. In short, it is of the greatest possible use in all superficial, localized pains that one wishes to relieve quickly, for its action follows within five minutes, persists ten to twelve hours, and if then the pain returns, it is much modified. The solution is made of fifty per cent. strength in boiled distilled water and filtered several times. A syringeful of gr. viij is given, but oftentimes one-half the quantity is sufficient. No bad effects from the antipyrin were observed, but locally the injection causes, in all cases, some burning pain, which is often intense. (American Journal of Medical Science, Oct., p. 404.)

Antipyrin.—Painless Subcutaneous Use of.

M. H. De Fougeray reports a method, which seems to us worthy of notice, of rendering subcutaneous injections of antipyrin perfectly free from pain. The plan which he employs is to half fill a hypodermic syringe with a fifty per cent. solution of antipyrin, which will amount to about five and a half grains; then immerse the syringe into a ten per cent. solution of cocaine, and enough of this solution should be drawn up into the syringe to make it about three-fourths full; this will amount to about one-third grain of cocaine. The two solutions readily mix in the body of the syringe, and no decomposition occurs, since the injection is at once performed. Further, it is important to choose a part of the body where the skin is loose and abundantly supplied with cellular tissue, and the needle should be quickly and deeply inserted into the cellular tissue. Dr. de Fougeray states in the *Gazette Hebdom. des Sciences Méd.* that he has employed this method in a large number of individuals, and it has always been unattended with pain, no accidents ever developing, no induration, and no ecchymosis. (Therapeutic Gazette, Jan., p. 25.)

CHRONIC ALCOHOLISM as a Cause of Liver and Kidney Disease.

During the debate upon Chronic Alcoholism at the Pathological Society, on Dec. 18th, 1888, Dr. Dickinson insisted on the overgrowth of fibrous tissues as the essential part of cirrhosis of the liver and of granular degeneration of the kidney. He had often seen what appeared to him to be irresistible evidence of the new growths in the cirrhotic liver and granular kidney of childhood, where it was very prolific and highly nucleated; he had satisfied

himself that new vessels were developed in this new tissue. Whatever might be the minute anatomy of cirrhosis of the liver, there could be no doubt as to the effect of alcohol in causing it. In the course of the circulation, alcohol reached the liver first and the kidneys only after distance and dilution. In a comparison between 149 persons whose occupation made them conversant with drink—potmen, brewers, &c.—and the same number of persons not so conversant, cirrhosis of the liver presented itself in twenty-two of the traders in drink and in eight only of the others. Thus the evidence as regarded the liver was clear enough, and might be taken to imply also that the class regarded as the more intemperate were not suspected without reason. With regard to the kidney there was no such evidence. The total of renal diseases was not greater in the drink class than in the others, while granular degeneration in particular was only slightly increased—thirty-one against twenty-seven. A similar conclusion was reached by examining persons dead of delirium tremens, with whom renal disease was not more frequent than in persons taken by chance who had died from accident. The effect of alcohol on the kidney was not to be entirely ignored, but had been overrated. The fact appeared to be that the liver was acted on chiefly by alcohol, the kidney by a variety of causes, of which alcohol might be one, the others being heredity, climate, gout, lead, &c., upon which it would be foreign to the present purpose to dwell. A point of interest as between the liver and kidney was the fact that the two seldom became fibrotic together. Only one-seventh of persons with granular kidneys had cirrhosed livers, showing that the two diseases were probably due to different causes. (Lancet, Dec. 22, p. 1231.)

COCAINE.—Case of Poisoning by; Recovery.

Dr. Moizard, in the *Revue Mensuelle des Maladies de l'Enfance*, reports the case of a boy 4 years old, who was given by mistake 25 centigrammes (4 grains) of cocaine. After taking the dose the child was put to bed, and went to sleep; but in half an hour afterwards awoke with pale face, haggard eyes, irregular and difficult respirations, covered with sweat, and complaining of violent pains in the chest and violent cramps. Some minutes later he was taken with excessive muscular agitation, compared, by the reporter of the case, to the movements occurring in grave chorea. He threw himself on the bed from right to left, rolled under the covers, beat the bed with his head, arms, legs, etc. The pupils were largely dilated; the speech was short and broken, the child answering questions which were addressed to him. Later he was seized with a sort of intoxication, accompanied with hallucinations; he saw balls of fire and animals upon his bed. Sensibility was intact; the pulse was very frequent, but there was so much restlessness that it was not possible to count it. Two hours after the taking of the poison the

symptoms were at their highest intensity,—great inspiratory and respiratory distress; cerebral trouble very accentuated. Under treatment with vomiting, and the administration of two injections, containing between 80 centigrammes (12 grains) of chloral, about two hours after the taking of the poison the agitation began to disappear. An hour later the child went to sleep, waking, however, several times during the night, with return of the choreic-like movements. Next day the symptoms had all disappeared. (Therapeutic Gazette, Jan., p. 26.)

COCAINE AND CHLOROFORM.—New Method of Mixed Narcosis. In a recent number of the *Wiener Klin. Wochen.*, Professor Obalinski proposes the following method of mixed narcosis, which he has repeatedly tried and found very useful. Pure chloroform is given to begin with in the usual way (that is, by means of Esmarch's mask) for from four to twelve minutes, the quantity of chloroform used being equal to from 4 to 12 grammes. A quantity of from 3 to 5 centigrammes of a 3 to 5 per cent. solution of cocaine is then injected into the place to be operated upon. There is no reason to be afraid of injecting even a larger quantity of cocaine, as chloroform, which is one of the best antidotes of cocaine, is administered at the same time; and also, because a part of the cocaine is removed by operation. After the injection of cocaine Prof. Obalinski does not use any more chloroform, especially when the operation is one of short duration; occasionally he employs it in small quantities and at long intervals of time. The method has hitherto been employed in twenty-four cases, and the following are its advantages: 1. The advantages of both the general and local anæsthetising methods are combined in it. Certain dangers proper to each of these methods are excluded by the combined procedure. The fact that a smaller quantity of chloroform is used gives greater confidence in its use, and besides at the same time a drug is employed which is known to be the best excitant, as it causes contractions of the blood-vessels as well as of the cardiac muscle, whereas chloroform paralyses these organs. Again, there are individuals who have a certain idiosyncrasy in respect of cocaine; in these, even proportionately small doses of the drug produce disagreeable symptoms of cerebral anæmia, shown by "tinnitus aurium," pallor of the face, giddiness, etc.; and an antidote, such as amyl nitrite, chloral hydrate, chloroform, ether, or morphine, when administered at the same time, instantly causes all these disagreeable phenomena to disappear. From all these facts it may be concluded that local cocaine anæsthesia in connection with semi-narcosis produced by chloroform is more reliable than pure chloroform narcosis. 2. Vomiting occurs much more rarely in mixed than in chloroform narcosis. 3. The patients awake more easily from the mixed narcosis, and do not feel depressed or weary. The sole disagreeable symptom—and it is one of rare occurrence—is that there is more

excitement, especially in nervous persons. This is manifested by crying, uneasiness, or strong tetanic muscular contractions. Similar symptoms are, however, also observed in pure chloroform narcosis. (British Med. Journal, Oct. 20, p. 903.)

CREASOTE.—Formulæ for the Administration of.

Dr. Keferstein (*Therap. Monatsch.*) gives some very good formulas for the administration of creasoté. The one at first recommended by Dr. Bouchardat, and later on by Dr. Fräntzel, has been modified by the author, as follows:

℞. Creasote gr. xx ; alcohol ℥ vj ; cinnamon water ℥iij ; cinnamon syrup ℥ vj. M. One teaspoonful three times daily.

For the Pill-form the following is recommended:

℞. Creasote gr. lx; powdered marshmallow root, purified liquorice āā ℥ jss ; mucilage of gum arabic q. s. M. Div. pill. No. cxx. Coat with gelatine. Sig. One pill three times daily.

In Irritative Cough and Diarrhœa the following is administered:

℞. Creasote gr. xxx.; acetate of lead, opium (pure) āā gr. v.; extract of liquorice ℥ jss; mucilage of gum arabic q. s. M. Div. pill. No. 50. Sig. One pill three times daily.

For Children, creasote in the form of the following emulsion seems best adapted:

℞. Creasote gr. xx. Dissolve in almond oil ℥j ; gum arabic ℥ v ; water ℥iij. M. Make an emulsion, and add, Compound tincture of orange peel gtt. xv. ; oil sugar of peppermint ℥ j. M. One teaspoonful two to five times daily.

For Drop-doses the author uses the following:

℞. Creasote gr. xlv ; tincture of cinnamon ℥j. M. Fifty drops, three times daily, in half a cup of warmed milk or warmed sweetened water, or Malaga wine, &c.

(*Deutsche Med. Wochens.* ; Medical News, Jan. 19, p. 73.)

CREOLIN.—Its Use as a Germicide.

This germicide is obtained from dry distillation of the best English coal ; it is a dark brown, oily liquid, of a tarry odour. It dissolves in alcohol, ether, and chloroform, and forms, when mixed with water, a uniform slightly alkaline emulsion. Bacteriological tests show it to be a stronger antiseptic than carbolic acid. It was used in the lying-in hospital in Munich under Prof. Winkel, by Dr. Nimopoulos, in one hundred and forty cases, which were compared with an equal number treated by corrosive sublimate (1 : 2000). The cases treated by creolin were divided into three groups ; one set was treated with ½ per cent. douches, one with 1 per cent., and one with 2 per cent. The creolin gave results fully as satisfactory as those from corrosive sublimate ; it was found to be a better deodorizing agent than either carbolic acid or corrosive sublimate. (*Münch. Med. Wochen.* ; American Journal, Feb., p. 171.)

Creolin as an Antiseptic in Diseases of the Throat and Nose.

The use of this new antiseptic and deodorizer in certain diseases of the throat and nose, especially those which are accompanied by profuse and offensive secretion, diminishes the amount of the discharge and improves its character. Local applications should be made by means of a cotton tampon about the size of the little finger, moistened in a solution of creolin and pressed carefully by means of a sound into the depressions of the diseased surface. The tampons are allowed to remain twenty minutes, during which time the patient experiences a slight burning sensation which soon subsides after removal of the application. In addition to this treatment a nasal douche of dilute, warm salt solution is to be used two or three times daily. (*Therap. Monatsh.*; Ibid, p. 171.)

FEVERS.—Egg Albumen Solution as a Diet in Fevers.

The food which meets, in my opinion, the conditions of febrile diseases more perfectly than any other aliment is the different solutions of the white of eggs. Many practitioners have pointed out the merits of these solutions; some of them, however, attribute to them injurious influences, like the production of fermentation, imperfect assimilation, and even irritation of the kidneys, and albuminuria; others correctly deny this and acknowledge its merits to a certain extent, and recommend it highly, but in one line with other articles of febrile diet; amongst these, Sir William Roberts and Uffelmann. I generally prepare the white of eggs or albumen solution in the following way: the whites of a dozen raw eggs are whipped to a stiff foam in order to tear fully all the fine membranes in which the liquid albumen itself is enclosed; allow this to stand for at least an hour, and then take one tablespoonful of the clear yellow liquid which settles at the bottom of the vessel and mix it well with three to five tablespoonsful of water; the latter should be boiled to a sterilizing heat and then left to cool off again. Before mixing the water with the white of eggs, some sugar should be dissolved in it, according to the taste of the patient. I generally found about twenty grains enough for the above quantity, of three or five tablespoonsful of water and one tablespoonful of white of eggs. To this sweetened mixture of white of eggs and water I then add, according to the age of the patient and the height of the fever, from fifteen minims to half an ounce of brandy. This addition does not produce any coagulation of the albumen; I have sometimes, in cases of extreme nausea, substituted champagne or other wine. This has seemed to act as well as the brandy, but produces cloudiness of the mixture, probably owing to some precipitation of albumen by the wine acids. I have therefore endeavoured to avoid this, thinking that the clearest solution will give the best chances for absorption. Before administering this food it should be well cooled by adding a small quantity of crushed ice, or exposing

it to a low temperature. It is given in doses ranging from a teaspoonful to two tablespoonsful every ten or fifteen minutes. During the administration of the prepared mixture, another settlement from the foam shall have taken place for further preparation in the same manner. Twelve eggs will generally furnish twelve tablespoonsful of clear albumen. (Dr. H. Salzer, Baltimore, Trans. Med.-Chir. Faculty of Maryland, April 1888, p. 225.)

GOITRE.—Results of Electrolysis in the Treatment of.

Fourteen cases have been operated upon. Three are at present under treatment, having been recently operated upon, and already showing beneficial results. One is a fibro-cystic, another a strongly marked exophthalmic, the third a vascular goître, with considerable dyspnœa. Eleven remain, two or three having slight vascular and exophthalmic symptoms, others with slight dysphagia or dyspnœa, all of the vascular variety. Four of them I have found it impossible to trace. These cases are in the infirmary only for a day or two, and the records of their addresses have been imperfectly kept. In two cases, however, they returned for a second operation, having been benefited by the first. Of the others, six have been absolutely cured, and the seventh, I hear, has the tumour still in no way changed by one operation. I think the results are very encouraging, and that, with greater experience, one will be able to operate with more confidence. The chief difficulties have hitherto lain in the manipulation of the needles, and our want of knowledge of the effects which might be produced on surrounding structures in so important a locality. (Mr. John Duncan, p. 292; and British Med. Journal, Nov. 3, p. 980.)

GRAVES'S DISEASE.—Its Treatment by Strophanthus.

In a paper on exophthalmic goître and its treatment by tincture of strophanthus, read before the Mississippi Valley Society at St. Louis, Dr. Daniel R. Brower reminds us that the treatment of this disease is very unsatisfactory. The drugs in ordinary use have but little influence upon it; but he thinks we have in strophanthus a remedy of great value in some cases. He has administered it in three cases with benefit. In one case, a man twenty-one years old, who had been under the ordinary treatment for three months without any abatement of symptoms—indeed with a steady progression of the disease—was cured in four weeks. Tincture of strophanthus was commenced in two-drop doses every six hours, and gradually increased until ten drops were given. The pulse, which at first was so rapid that he could not count it, was finally controlled, falling when quiet to 85 per minute. The exophthalmos and goître also gradually disappeared. The strophanthus was slowly withdrawn and tonics substituted. The patient continues well. Dr. Brower does not advise reliance solely upon strophanthus. Ordinary hygienic rules must be observed, such as

the avoidance of fatigue and physical and mental excesses, a carefully regulated diet, and attention to bowels and skin. He also orders ordinary tonics, and the application of galvanic electricity to the cervical sympathetic nerves. (Journ. American Med. Assoc.; Practitioner, Jan., p. 51.)

HELLEBORINE.—Local Anæsthetic Action of.

MM. Vittovio and Elvidio used aqueous solutions of helleborine, and instilled them under the eyelids in contact with the cornea. They thus obtained anæsthesia of this membrane which lasted longer than the anæsthesia produced by cocaine. They maintain that at the same time the mobility of the eyelid was preserved, that the pupil did not dilate, and that the intraocular tension was not modified. Used in subcutaneous injections helleborine caused local anæsthesia, and simultaneously produced cardiac disturbances. From these facts we may conclude that helleborine is a local anæsthetic which should, however, be used with great discretion. (*Gazette Hebdomadaire.*)

[It should not be forgotten that helleborine has a very powerful action on the heart, and that the dose is only a small fraction of a grain.—Ed. American Journal, Jan., p. 63.]

HYPODERMIC SYRINGES.—How to keep them Clean.

Hypodermic syringes, the canulæ of which have become obstructed, may be cleared by holding the needle for a moment over a flame; the foreign matter is at once expelled or destroyed. Should the wire in the canula become rusted, the former can be removed by dipping the latter in oil and holding it over a flame. It is well to introduce oil into the needle and then to heat the latter; rusting is thereby prevented. When about to use the needle, alcohol should be passed through it. (*Münchener Med. Wochens.*; Medical News, Oct. 20, p. 447.)

INGROWING TOE-NAIL.—Treatment.

Hofmann (*München. Med. Wochens.*) recommends the following procedure: The wound and the part are thoroughly cleansed and disinfected with sublimate solution; several drops of a solution of ferric chloride are poured upon the sore spot and the nail elevated; the part is then permitted to dry. This process is repeated on the second and third days. In a few days the hard crust which has formed is removed with the forceps. The bleeding which results is checked by the use of the iron solution. In three or four days the crust is again removed; and this is repeated until the surface of the skin is smooth. On the second or third day, already, the nail, softened and made friable by the iron solution, may with some care, be painlessly removed with a small scissors or blunt knife. To prevent recurrence, bits of cork should be placed under the margin of the nail. (Medical News, Oct. 20, p. 447.)

Ingrowing Toe-nail.—Its Treatment by Tinfoil.

Dr. Theodor Clemens of Frankfort strongly recommends the employment of tinfoil in the treatment of ingrowing toe-nail. He first has the toe thoroughly washed with soap and carefully dried. He then envelops the whole nail with tinfoil, putting a strip between the portion that grows in and the raw surface caused by it. The tinfoil is fixed by means of a very thin layer of common wax, and the patient told not to wash the part, but to use dry bran for rubbing off the dirt. Of course the toe has to be repeatedly dressed with tinfoil; but, if the operation is carefully performed, it is surprising how long the tinfoil will remain intact, even when the patient is, as was usually the case in Dr. Clemens' hospital practice, very poor and very badly shod. The results are stated to have been most satisfactory, and are ascribed by Dr. Clemens not merely to the mechanical action of the tinfoil, but to the effect of the permanent contact of a combination of metals comprising iron, copper, arsenic, molybdenum, wolfram, and bismuth, with a moist and growing portion of flesh. This, he says, brings about in a few weeks the complete healing of the sore, and causes the nail to grow more slowly and in a more healthy manner. (Lancet, Feb. 16, p. 345.)

IRON PREPARATIONS in the Diseases of Children.

Dr. H. Gillet (*Revue de Thérapeutique*) remarks that to the fourth or fifth year, one should guard against the use of medicaments and above all against the use of iron preparations. And yet two of these would form an exception, namely, the protoiodide and the perchloride of iron. The first of these is, properly speaking, not an iron preparation, but rather an iodide, and is used in the treatment of scrofulous affections; the second is used in hemorrhages and in conditions of a generally grave nature, such as typhoid fever, diphtheria, etc. Iron preparations, to be acceptable to children, must first have a pleasant taste: secondly, not derange the digestive functions; and thirdly, admit of being administered in small bulk. This last condition is easily attained, since the preparations in question act in very small doses. Thus to a child from eight to ten years, one of the following powders given once a day will be found to be sufficient:

℞. Subcarbonate of iron, powdered rhubarb, sugar flavoured with vanilla, āā 2 grains. Mix with some preserved fruit.

Iron preparations appear under two forms, soluble and insoluble. The *insoluble* in the powdered form, as: the subcarbonate reduced, and saccharated carbonate of iron, etc., are easily mixed with any disguising substance. Pills being generally refused, they must either be administered in their natural state or in the form of chocolate tablets:

℞. Reduced iron 3 grains; chocolate ℥x. Make one tablet—administer during the day ¼ or ½ tablet according to age of child.

The *soluble preparations* are numerous ; those to be preferred are the lactate, the citrate, the chloride, and the tartrate of iron and potassium. The lactate is less irritable to the stomach than the citrate, and can be administered in wine or liquor as follows :

℞. Citrate of iron 30 grains ; Malaga wine ℥iij. One teaspoonful once or twice daily.

The *perchloride*, if it were stable, would have the preference over all other preparations, the syrup containing two grains of the iron in ℥ v of the syrup.

The *chloride* can be administered alone, or as in following formula :

℞. Solution of chloride of iron ℥ iss ; spirits of ether ℥ iij. Five to ten drops in sweetened water, to be taken through a tube.

Tartrate of iron and potassium can be administered in various ways :

℞. Tartrate of iron and potassium, cinnamon water, āā ℥ j ; simple syrup ℥iv. One to two teaspoonfuls three times daily. Or,

℞. Tartrate of iron and potassium 30 grains ; syrup of bitter orange-peel ℥ij ; muscatel wine ℥viij. A small wine-glassful after each meal. (Medical News, Jan. 19, p. 71.)

HYPODERMIC MORPHIA.—The Best Preparation to Inject.

As far as my experience goes, I certainly prefer the tartrate to the acetate. (1) A case requiring hypodermic injection may not occur for many weeks, and then you may be suddenly called to a case urgently demanding its immediate use. It is of importance, therefore, that the solution we keep by us should be a reliable one, and one that keeps unchanged for long periods. The acetate is unstable, owing to the continued escape of the acid and the separation of the morphia in the form of a white powder. The solution, therefore, becomes weakened and unreliable. (2) The punctures frequently inflame, and itch a good deal, owing to the excess of acid, though this may occasionally depend on the development of a fungus in a solution that has been long kept. The smallest excess of acid in certain individuals causes local trouble, and without an excess, the morphia is deposited, and the needle clogged. To overcome this objection, Martindale prepares a solution of the acetate from the pure alkaloid, which is certainly an improvement on the Pharmacopœial preparation. The points in favour of the tartrate are :—(1) It is a permanent solution, and remains neutral. (2) It is sufficiently soluble for all practical purposes, though it is not so soluble as the acetate, requiring twelve parts of water to dissolve it. It is important to remember that morphia may occasionally be converted into apomorphia when long kept in solution. Tabloids of morphia for hypodermic use are prepared by Messrs. Burroughs and Wellcome. These being dissolved in water at the time of administration remove the objections to morphia kept in solution, and should they be found to be of perfectly reliable strength will no doubt come into very general use. (Dr. E. O. Daly, Physician to Hull Royal Infirmary, Medical Chronicle, Dec., p. 216.)

Hypodermic Use of Morphia.—The Initial Dose.

Great diversity of opinion exists as to what constitutes a safe initial dose in a person unaccustomed to its use. This should not exceed for an adult female one-eighth grain, for an adult male one-sixth grain. I have myself seen death follow upon the injection of one-quarter grain in an adult male, and Ringer says "a larger quantity than one-sixth grain sometimes produces serious consequences." There are, I think, two reasons for the large quantities often given. (1) The maximum officinal dose of half-a-grain is much too high. This is evident, when we consider that the maximum hypodermic dose, and that for administration by the mouth, is fixed at the same quantity, namely, half-a-grain. All authorities are, I believe, agreed that morphia injected hypodermically is at least twice as potent as morphia given by the mouth. The maximum hypodermic dose ought therefore to have been fixed at one-quarter grain instead of half-a-grain, and we have, I am afraid, the British Pharmacopœia to thank for many fatal results that have occurred. (2) Many of the younger members of the profession have taken their standard of an ordinary dose from the quantities they were ordered, when clerks or dressers, to inject during the time they were in hospital. They forget that the majority of these patients were suffering from incurable disease. (Dr. Daly, Ibid, p. 217.)

MALIGNANT DISEASE.—Pyrexia, Shiverings, and Pyæmia in.

Dr. Finlayson, of Glasgow, after narrating several exceedingly interesting cases, in illustration of the occurrence of symptoms usually taken as indicating septic inflammatory processes, occurring in cases which were found to be of a malignant nature, says:—"From a survey of the facts here adduced, we may consider: (1) That in the course of malignant disease, and even early in the case, we may have distinct but usually moderate pyrexia of the remittent type; (2) that occasional rigors may occur in such cases, without any evidence of inflammatory complications; (3) that the terminal phase of malignant disease may present higher degrees of pyrexia, or even rigors, due to inflammatory complications, which may be regarded as, in a sense, accidental; and (4) that in cases of malignant disease rigors and pyrexia of the pyæmic type may occur with the formation of multiple abscesses." (Lancet, Oct. 13, p. 712.)

MILK.—Sterilization of Milk at the Time of Milking.

Raudnitz, before the Central Organisation of German Physicians in Bohemia, on July 15, stated that milk obtained from a cow three weeks before, and kept at the ordinary temperature of a room, remained as alkaline as immediately after milking, and was not to be distinguished by taste, odour, or appearance from freshly drawn milk. This circumstance, as well as the fact that repeated boiling, to which a sample was subjected, produced no change, bespeaks entire freedom from germs, without any bacteriological examination.

The steam apparatus in the stalls for boiling the feed is also used to sterilize the glass receptacles furnished with air-tight rubber stoppers, so that there is no extra cost. A covered wooden tub with shelves of perforated tin plate receives the bottles. By means of a pipe steam is passed into the tube from below. Prior to milking, the udder of the cow, the milk-pail, and the hands of the milker are carefully cleansed. The milk is strained through clean linen directly from the pail into the sterilized bottles. Should a steam apparatus not be accessible, the bottles can be sterilized in a large, covered vessel. Upon the recommendation of the speaker, sterilized milk is so prepared and sold at Hostiwitz, near Prague, during this autumn. Since introducing among his patients milk thus sterilized, he has seen no cases of diarrhœa. Constipation is the rule upon weaning; in which case a small quantity of carbonate of magnesium or phosphate of sodium may be added. (*Wiener Med. Presse*; Medical News, Oct. 6, p. 383.)

MYRTOL as a Disinfectant for the Air-passages.

Myrtol, the new disinfectant for the air-passages, is best given, says Professor Eichhorst (*Therap. Monats.*), in gelatin capsules, each containing 0.15 gram of myrtol. The drug has a powerful and penetrating odour, which can be detected in the breath for two days after one capsule has been taken. To obtain the deodorizing and disinfectant effects in cases of putrid bronchitis and pulmonary gangrene, 2 or 3 capsules should be taken every two hours, though the taking of so many as three capsules may cause loss of appetite. The effect is often wonderfully rapid, the bad odour disappearing from the sputa, and the sputa diminishing rapidly. Myrtol has no effect on tubercle bacilli. (Journal American Medical Association, March 6, p. 341.)

NITRITE OF ETHYL SOL.—A Substitute for Spt. Nitrous Ether.

Of late years, much attention has been devoted by pharmacists to spirit of nitrous ether. A better method for its production has been introduced, and its assay has been rendered easy by the methods for its analysis invented by Eykman of Tokio, Allen of Sheffield, and others. But it has been found that however well made spirit of nitrous ether may be, it tends rapidly to lose its ethyl nitrite if dispensed in the ordinary way, and pharmaceutical chemists have sought to devise preparations better adapted for retaining a definite strength of the ethyl salt than the ordinary spirit of nitre. About two years ago, Williams showed that glycerine tends to prevent the loss of nitrite of ethyl from its solution in alcohol; and last April Dunstan and Dymond proposed a new method of making nitrite ethyl, and suggested a preparation which might be employed medicinally. It consists of a dilute solution of nitrite of ethyl in absolute alcohol, or in absolute alcohol containing 5 per cent. of glycerine, and analyses were given showing that thus dissolved the ethyl nitrite solution

may be long kept without important change. I have recently made trial of two solutions of this kind which Professor Dunstan has been good enough to forward me—one contained a little under 2 per cent., and the other about 3 per cent. of nitrite of ethyl, and from the results obtained I am satisfied that the introduction of such a solution into general use would prove very advantageous. (Dr. D. J. Leech, p. 138.)

OILY MIXTURES.—A useful Menstruum for.

℞. Cort. quilāy. sap. 5 dr.; bals. tolu, 7 oz.; vanillæ 1 dr.; juice of 2 lemons; sp. vin. rect. 2 O. Bruise the quillaya bark and the vanilla with the balsam, and digest with the lemon juice and spirit for six days, then filter. This tinctura emulsiva holds oils or resins in suspension. With castor oil it may be used thus:—℞. Ol. ricini 1 oz.; tinct. emuls. 1½ drs. Rub together in a mortar, and add simple syrup 1 oz., aq. flor. aurantii ½ oz., and an elegant mixture will be obtained. (*Bull. de Thérap;* Medical Chronicle, Nov., p. 151.)

PERNICIOUS ANÆMIA.—Certain Changes in the Liver in.

Referring in detail to some observations upon the quantity of iron found in the liver in various diseases made by Stahel, Rosenstein, Taleski, and Quincke, Dr. Hunter says:—"These observations must, I think, be regarded as establishing conclusively—(1) that the amount of iron contained in the liver in pernicious anæmia is far in excess of that met with in any condition at all resembling it; and (2) that the presence of this excess can no longer, as hitherto, be regarded as an accidental condition—the result of some weakness of the corpuscles common to all forms of anæmia alike, and only varying in degree in different cases. On the contrary, this condition of the liver appears to me clearly to indicate—and this I would regard as one of the most important results of my study of the morbid anatomy of the disease—(1) that a destruction of blood occurs in this disease far greater than is met with in any other form of anæmia, and notably much in excess of that occurring in the anæmia of wasting disease; and (2) that the liver must be regarded as playing an important part, if not in the destruction itself, at least in the disposal of the pigment remains." (Lancet, Sept. 29.)

Pernicious Anæmia.—Conclusions as to the Nature of.

Dr. Hunter appends the following summary of his most important and laborious investigations into the nature of pernicious anæmia, an account of which appeared in the Lancet, Sept. 22, 29, and Oct. 6th, 1888, an abstract of which will be found at page 145 of this volume. (1) Pernicious anæmia is to be regarded as a special disease both clinically and pathologically. It constitutes a distinct variety of *idiopathic* anæmia. (2) Its essential pathological feature is an excessive destruction of blood. (3) The most constant anatomical change to be found is the presence of a large excess of iron in the liver. (4) This condition of the liver serves at once to distin-

guish pernicious anæmia post mortem from all varieties of *symptomatic* anæmia, as also from the anæmia resulting from loss of blood. (5) The blood destruction characteristic of this form of anæmia differs both in its nature and its seats from that found in malaria, in paroxysmal hæmoglobinuria, and other forms of hæmoglobinuria. (6) The view can no longer be held that the occurrence of *hæmoglobinuria* simply depends on the quantity of hæmoglobin set free. (7) On the contrary, the *seat* of the destruction and *the form assumed by the hæmoglobin* on being set free are important conditions regulating the presence or absence of hæmoglobinuria in any case in which an excessive disintegration of corpuscles has occurred. (8) In paroxysmal hæmoglobinuria the disintegration of corpuscles occurs in the general circulation, and is due to a rapid dissolution of the red corpuscles. (9) In pernicious anæmia the seat of disintegration is chiefly the portal circulation, more especially that portion of it contained within the spleen and the liver, and the destruction is effected by the action of certain poisonous agents, probably of a cadaveric nature, absorbed from the intestinal tract. (Lancet, Oct. 6, p. 658.)

PHENACETIN as an Antipyretic.

Of the many reports on the use of phenacetin or acetphenetidin, one recently made by Dr. Friedrich Müller (*Therap. Monats.*, August, 1888) is of unusual merit. He made numerous trials of the remedy in various diseases, and found that the temperature in adults was lowered by doses of from seven to eleven grains, and seldom as much as fifteen grains was used. The fall in the temperature occurred within from one to four hours, and was accompanied in most cases with perspiration, but without disagreeable sensations. During the apyrexia, which lasted from three to five hours, the patients were quite comfortable, having a better appetite and more sleep. The rise in temperature was unaccompanied by a chill. For the patient's comfort it is desirable to avoid alternate fall and rise in the temperature. If the drug is administered continuously, the temperature rises in spite of it, and after some days the system becomes habituated to the agent, and larger and larger doses are required—in fact, so large as possibly to become dangerous. He has observed marked cyanosis from 90 to 120 grains daily. Nothing more is accomplished by phenacetin than by the other antipyretics, for example, antipyrin; but it has the advantage of less unpleasant accompaniments. It is tasteless, vomiting and indigestion appear only exceptionally, ringing in the ears, or exanthematous eruptions, or signs of renal irritation were not observed. In some cases phenacetin seemed to promote diarrhœa. Like some other antipyretic agents, phenacetin possesses the property of quieting pain, and has been employed to relieve headache, except that connected with organic cerebral disease, or uræmia. For this purpose forty-five, or even seventy-five, grains a day are required. In

some neuralgic affections the pain is relieved by phenacetin, and for such purposes it seems to be in no wise inferior to antipyrin and antifebrin. In twenty-four cases of acute articular rheumatism, prompt relief from fever and the pain and swelling in the parts was obtained in fifteen cases, and disappeared wholly in from two to nine days, in four cases no improvement followed, and in six the condition was not affected. Of these six, two were of gonorrhœal origin, and two were considered cases of chronic rheumatism. Phenacetin, it would seem, deserves to be placed in the same rank with antipyrin and antifebrin as an antipyretic, and also as a means of relief in rheumatism and neuralgic pains. It is interesting to note that phenacetin possesses practically no antiseptic qualities. (American Journal, Nov., p. 507.)

Phenacetin as an Analgesic.

It is above all as an analgesic that phenacetin outrivals its predecessors. While it is quite as powerful as antipyrin and acetanilid, it does not cause the pain in the stomach, or the scarlatiniform rash of the former; nor does it give rise to the cyanosis of the latter. However prolonged may be its administration—and we have given it for months in doses of 1 to 2 grammes per day—we have never observed any bad effect. We have used it for the relief of every form of pain (neuralgias, migraine, rheumatic pains, muscular rheumatism, acute articular rheumatism, the lightning pains of tabes, etc.), and always with the best results. Further, in cases of hysteria, and of hysterical or neurataxic pains, phenacetin has seemed to produce better effects than the bromides; it calms the excitability of the nervous system, and in some obstinate cases of nervous insomnia it procured sleep. Phenacetin seems therefore to be not only an analgesic but a narcotic. (Dr. Dujardin Beaumetz, British Med. Journal, March 9, p. 522.)

PYRODINE.—A New Antipyretic.—Results of Investigation of.

(1) Pyrodine is a powerful antipyretic. (2) It reduces fever temperatures quickly, and maintains the temperature at a low level for some hours. (3) It is easily taken, and produces marked perspiration, but not nausea, vomiting, or collapse. (4) It is especially applicable in cases of pneumonia, scarlet fever, and typhus. Given in small doses in the latter disease, it enables the patient to pass through the fever period at a lower temperature range without delaying the crisis, and it seems also to shorten the period of convalescence. (5) It is less applicable in cases of typhoid, owing to the early exhibition of toxic symptoms. (6) It appears to act equally well in migraine and neuralgia, though on this point our observations are as yet not numerous enough to admit of a definite opinion. (7) Given in often repeated doses at short intervals, it easily shows toxic properties, and these depend on the action of the drug on the blood, producing hæmoglobinæmia. It should not be

given (unless the temperature be very high) oftener than once in 18 or 24 hours, and it is not safe to continue its use for more than a few days. (8) It is found to act in cases where the other antipyretics have failed. (9) The dose for children is 2 to 4 grains; for adults 8 to 12 grains. (10) It is a much more powerful antipyretic than either antipyrin, antifebrin, or phenacetin, but it is also much more toxic than these bodies. This disadvantage is, however, reduced by the fact that it is rarely necessary to give more than one dose in 12 to 18 hours, as the temperature is kept low for a longer period than if any of the other antipyretics are given. (11) It reduces the pulse as well as the temperature, and often causes diuresis. (Dr. J. Dreschfeld, p. 137.)

Pyrodine.—The Toxic Action of.

The toxic effects which pyrodine produced (jaundice, hebetude, icteric urine, which occasionally showed the presence of globulin and albumin) were so much like those seen occasionally after the administration of antifebrin and phenacetin (Lépine), that it seemed likely that they were due to a mild form of hæmoglobinæmia. Experiments on animals made with pure acetylphenylhydrozin fully confirmed this view. Having obtained the necessary licence, I administered to rabbits, by means of a catheter passed into the stomach, varying doses of this body. It was found that doses of acetylphenylhydrozin, which did not exceed one grain per pound of the body weight of the animal, produced no ill-effect; if, however, this dose was exceeded, the animal became anæmic, and if the administration was continued for two or three days (one dose per diem), then the rabbit died from typical hæmoglobinæmia, as the post-mortem examination showed. The urine contained large quantities of hæmoglobin casts; the kidneys showed the characteristic deposits in the convoluted tubes; the spleen, of chocolate colour, contained large masses of hæmoglobin and groups of cells, each enclosing several red blood corpuscles. The liver had a peculiar ochre colour, and showed its capillaries distended with masses of hæmoglobin. The blood showed the spectrum of methæmoglobin. From these observations it is clear that pyrodine exhibits toxic effects much sooner than either antifebrin or phenacetin, and that it is not safe to give it in large doses or to repeat the dose often. (Dr. J. Dreschfeld, p. 136.)

SALICYLATE OF SODA.—An Unusual Effect of.

Amongst the effects produced by the members of the salicy group upon the nervous system, mydriasis has been noticed in association with the amblyopia frequently caused by the action of these drugs; but, so far as we know, myosis has not been observed as a result of their administration. In a case recently under our care extreme contraction of the pupil was caused by the use of large doses of salicylate of sodium, and as this symptom was somewhat misleading

to us, we consider it our duty to make the facts known. The myosis and loss of reaction to light appeared within eight hours of the commencement of the employment of the salicylate of sodium, and did not entirely pass away until thirty hours had elapsed from the time of its last administration. Our purpose in describing this pupillary phenomenon is to call attention to a result of the action of the salicylates upon the nervous system which might lead, in cases in which it appears, to an error in diagnosis. In the present instance we were somewhat inclined to conclude that we had to deal with a cerebral affection, and such an idiosyncrasy as the case displayed may probably be seen again. The salicylates are in frequent use by patients acting on their own responsibility, and it is well to know that a contracted pupil, showing no reaction to ordinary stimuli, may be caused by them. (Dr. G. A. Gibson, and Dr. R. W. Felkin, Practitioner, Jan., p. 17.)

SCARLET FEVER.—The Use of Oxygen in.

Dr. D. Astley Gresswell concludes a long and interesting paper upon the treatment of Scarlet Fever with the following remarks. The cases, 588 in number, were treated in the South-Western Hospital of the Metropolitan Asylums Board. The oxygen gas, in specially arranged metal cylinders, and the oxygen water, in siphons, were obtained from Brin's Oxygen Company Limited, Connaught Mansions, Westminster. Reviewing the results obtained from the administration of oxygen in scarlet fever, it would appear that not a few advantages may be derived from its use. The water by itself is undoubtedly efficient in assuaging the febrile thirst, being taken greedily and subserving thereby several purposes. It reduces nausea, increases the appetite, reduces perhaps the fever and the delirium; further, it aids in metabolism; it certainly serves to maintain an active mechanical flushing of the renal tubules, and in the latter process it may aid in the transudation outwards and removal of noxious bodies, possibly of the scarlatinal virus itself. Ordinary drinking water will not serve the same purpose because patients can be induced to take but little. Nor will lemonade, and this for two reasons. In the first place, patients do not take it as freely as oxygenated water. And secondly, it needs to be borne in mind that carbonic acid is formed to excess in the febrile body; and this acid is known to interfere with capillary circulation; inhalation of it is said indeed to excite fatty degeneration of the cells of the convoluted tubes of the kidney and to be a cause of albuminuria. Hence we may surely doubt whether febrile thirst should be assuaged with lemonade or other carbonated water. Upon the whole, oxygenated water would appear to be the most convenient effervescing and appetising water for exhibition to a person the subject of pyrexia. As regards the oxygen gas it proved, I think, beneficial in many ways. Hopeless cases were revived by it, and existence was by it occasionally prolonged. It may be regarded, I think, as having

served a useful end in a case of uræmic coma and in several cases of pulmonary complications. In badly nourished convalescents the appetite and the weight were quickly increased by it. In several moderately severe cases the gas with the water appeared to have a powerful influence for good, as also in three cases in which the prognosis was undoubtedly very grave. And the tendency to albuminuria was, I think, without question diminished in cases in which the oxygen gas and oxygenated water were perseveringly administered. (Practitioner, Nov., p. 333.)

STROPHANTHUS.—Diuretic Action of.

Lemoine (*Comptes rend. de Soc. Biol.*) finds polyuria the most constant of the effects of strophanthus. Experiments on healthy persons with gtt. 5-6 of tincture gave double the quantity of urine in forty-eight hours. The same success was obtained in cardiac cases; as a rule, the persistence of the diuresis was marked. A secretion of ℥ xiij was increased to three quarts, and five days after suspending its use was still two quarts. In three cases a very abundant serous diarrhœa was caused, only to be controlled by stopping the drug. (American Journal, Nov., p. 511.)

SULPHUR.—Therapeutic Use of long-continued Small Doses.

I have been accustomed for several years to administer sulphur in very small doses, and for a lengthened period of time, in the treatment of disorders of the alimentary canal and liver; also in certain diseases of the joints, especially rheumatoid arthritis (one of the articular affections called by the erroneous name of rheumatic gout); and, lastly, in chronic muscular rheumatism and skin diseases. Sulphur is a very ancient remedy, and one in which the public has great faith. It is doubtless in proper cases a valuable medicine; it is also one which can be given with confidence, as it is an element normal to the system, and one which enters into the composition of some of the most important proximate principles of the animal body, as fibrin and albumen, and also of taurocholate and sulphocyanide of sodium, important and characteristic salts of the bile and saliva. The forms of sulphur commonly employed in medicine are the milk and flowers of sulphur: the former precipitated from an alkaline solution by the addition of an acid; the latter prepared by the sublimation of the solid element. These two officinal forms are identical as far as chemical composition is concerned, and differ but slightly from each other in physical condition, and there is every reason to suppose that their physiological and therapeutical properties are the same. Certain compounds of sulphur, in which the sulphur is held in a weak state of combination, as the sulphides of potassium, calcium, and of hydrogen, are occasionally employed as medicinal agents, especially in the form of mineral waters, such as those of Harrogate, Strathpeffer, Moffat, Llandrindod, and Lisdunvarna, in the British Isles; and the waters of

Aix-les-Bains, Challes, Aix-la-Chapelle, Bagnier de Luchon, Baden (Switzerland), and Barège, on the Continent. It is not my intention to speak at present of the sulphurous mineral waters, but I shall confine my attention to the value of the officinal preparations above alluded to—namely, the milk and flowers of sulphur: the "sulphur præcipitatum" and the "sulphur sublimatum" of the Pharmacopœia. The first difficulty in the investigation was to find out in what form these preparations could be easily and conveniently administered—as we all know that patients suffering from chronic ailments cannot readily be induced to pursue any treatment for a long time, especially if it entails much thought or trouble on their part. Sulphur is too bulky to be given in the form of a pill, and many object to take medicine in this form; rubbed up with milk, the precipitated sulphur is by no means disagreeable, but the daily preparation involves trouble. The confection of the Pharmacopœia is an elegant preparation of sublimated sulphur, but many object to its jam-like consistence, and it is apt either to ferment or become dry and unmanageable in hot weather. At last, nearly five years ago, it struck me that a lozenge might be made very similar in composition to the confection; and the one I originally ordered, and which I see no reason to alter, contains in each five grains of the milk of sulphur and one of cream of tartar. To this lozenge I gave the name of the "Compound Sulphur Lozenge," and there are usually about twenty to the ounce avoirdupois. This lozenge is far from disagreeable, the cream of tartar giving it a pleasant, acidulous taste; it contains sufficient sulphur for therapeutic purposes, and my experience has shown me that patients are willing to take it for an almost indefinite period of time. We have, then, in the use of the compound sulphur lozenge a ready means of testing the value of small doses of sulphur persevered in for a long time, and I have found that in many cases one lozenge each night is quite sufficient to effect the desired end; if required, however, two may at any time be taken at bedtime, or one each night and morning. (Sir Alfred B. Garrod, Lancet, April 6, p. 665.)

[See also "Chronic Affections of the Alimentary Tract and Liver" at page 73 of this *Synopsis*, for use of the Compound Sulphur Lozenge.]

TYPHOID FEVER.—Surgical Treatment of Perforation of the Intestine in.

At the Annual Meeting of the American Surgical Association, 1888, Dr. J. Ewing Mears, of Philadelphia, read a paper on this subject, from which the following excerpt is taken: A careful search of current medical literature reveals but four cases of surgical interference in perforating typhoid ulcer, in all of which a fatal result occurred. The reports of these four cases were given in detail. These cases were operated on by the following surgeons, Prof. Kussmaul, of Strasburg, Mr. T. H. Bartlett, of Birmingham,

Dr. R. B. Bontecou, of Troy, N. Y., and Dr. T. G. Morton, of Philadelphia. In Prof. Kussmaul's case the disease was severe, and perforation occurred early when the infective process was at its greatest height, and the vital forces at the lowest point. In Dr. Morton's case the disease was mild, "a walking case." In both of these cases the shock consequent upon the perforation was prompt and profound. In the first case operation was performed within a few hours, but death without reaction from shock occurred in eleven hours. In Dr. Morton's case operation was resorted to twenty hours after the accident. Six hours after operation, the patient sank into a collapsed condition and died. The operations in these cases were performed by surgeons of experience, under strict antiseptic precautions and within a reasonably short time after the accident. We must, therefore, look for the cause of failure in the systemic condition; the degenerated and devitalized condition of the organs and tissues caused by the infectious process in active progress, utterly deprived of the power to resist the shock of operation; or in the condition of the structures beginning to recover from the effect of the poison in milder form, extremely sensitive to any rude impressions and wanting in tone and power of resistance. It is in the latter conditions alone that the surgeons may hope to achieve success by surgical interference, and then only when such methods are adopted as will reduce to the lowest point shock of operation. The following propositions and suggestions were offered: 1. Surgical interference is not justifiable and should not be instituted in cases of typhoid fever in which perforation occurs when the infective process is at its height. 2. In mild cases of the disease in which the pyrexia has not been of high grade, and in which perforation occurs at the end of the third week, or later when the stage of convalescence is fully pronounced, laparotomy may be performed. Surgical interference in cases of this character is advocated with the hope that if the method of operation suggested by Lücke—laparotomy with the creation of an artificial anus—be adhered to, success may be attained. 3. Rapidity of operation will be an essential factor in the achievement of success, through which prolonged exposure of the cavity will be avoided and shock greatly lessened. (Philadelphia Medical News, Sept. 29, p. 358.)

Typhoid Fever.—Diagnostic Value of Accidental Rashes in. At the Royal Academy of Medicine in Ireland, on Nov. 16, 1888, Dr. J. W. Moore read a communication on Accidental Rashes in Typhoid Fever. In his paper the author explained that it was not his intention to allude to the essential rose-spot rash of typhoid fever or to the more common epiphenomena of the disease connected with the skin, such as *taches bleuâtres*, purpura spots, vibices, and sudamina, or sweat vesicles; or, lastly, to the coexistence with typhoid fever of other specific diseases showing characteristic erup-

tions—such as scarlatina, measles, variola, and, above all, typhus. He desired rather to draw attention to certain other accidental or adventitious appearances of the skin, which were of somewhat rare occurrence and, from a diagnostic point of view, of considerable importance. These were—(1) simple hyperæmia; (2) miliary eruptions; (3) erythematous rashes; and (4) urticaria. Dr. Moore then detailed a series of cases which exemplified the occurrence of these accidental rashes, and summed up as follows:—1. Not infrequently, in the course of typhoid fever, an adventitious eruption occurs, either miliary, urticarious, or erythematous. 2. When this happens, a wrong diagnosis of typhus, measles, or scarlatina respectively may be made, if account is not taken of the absence of the other objective and subjective symptoms of these diseases. 3. The erythematous rash is the most puzzling of all; but the prodromata of scarlet fever are absent, nor is the typical course of that disease observed. 4. This erythema scarlatiniforme is most likely to show itself at the end of the first or in the third week of typhoid fever. 5. In the former case, it probably depends on a reactive inhibition of the vaso-motor system of nerves; in the latter, on septicæmia, or secondary blood poisoning; or both these causes may be present together. 6. The cases in which this rash appears are often severe; but its development is important rather from a diagnostic than from a prognostic point of view. 7. Hence no special line of treatment is required beyond that already employed for the safe conduct of the patient through the fever. (Dr. J. W. Moore, Dublin, Lancet, Dec. 22, p. 1238.)

Typhoid Fever.—The Employment of Digitalis in.

The following conclusions are appended to a paper by Dr. Joseph Leidy, jun, University Hospital, Philadelphia, dealing mainly with clinical experiments: (1) Digitalis depresses normal temperatures from one to one and a half degrees; that this subnormal range remains from one to two days after the administration has ceased. In typhoid fever it may be said,—(1) Digitalis reduces the pulse-rate, diminishes the respirations, and depresses the temperature. (2) That with a fall in the pulse and respirations there is a corresponding decline in the temperature. (3) That a weak heart is no contraindication to its use. (4) The main indication for its use is a weak heart, independent of hyperpyrexia. (5) Though a most powerful antipyretic in treatment of hyperpyrexia when associated with a weak heart, it should not, however, be used to meet this indication when there are no evidences of cardiac weakness,—i.e., when the pulse is strong, full, and bounding. Both the tincture and infusion were used, preferably the tincture in typhoid fever and infusion in chronic heart disease. We found no hesitation in using the tincture hypodermically in typhoid fever when the stomach refused to retain it. It has been used since the above cases were treated, in combination with quinine, and in addition to the cold

water treatment, with good results. In conclusion, the writer wished to express his heartfelt thanks to Dr. William Pepper and Dr. William Osler for reference to the cases treated in their wards. (Therapeutic Gazette, Oct., p. 661.)

Typhoid Fever.—Diet in the Stage of Convalescence.

In the course of a discussion upon this subject at the annual meeting of the Association of American Physicians, 1888, Dr. William Ord, of London, said:—"On more than one occasion of late, I have had warning that one must be guided to a certain extent by the desire of the patient for food, and I have learned to give in to this desire in general. I will quote a case which occurred a month or two ago. It was a girl in St. Thomas's Hospital, who had a severe attack of typhoid fever, and convalescence had set in. Then, without any existing condition to account for it, she began to have a large range of temperature, rising steadily in the evening and falling in the morning, till at the end of three days the range of temperature was from 3° to 5°. With this she became slightly delirious, and menaced her physician when he came round. Then, for two or three days more, the temperature was still higher with more disorder in her mind and craving for food. Now I tried the effect of giving her solid food. She was allowed at once boiled sole. Within twenty-four hours after taking the fish her temperature became normal for four hours, her delirium ceased, and from that time on she made an uninterrupted recovery. This is an instance of what we have to do in all cases of convalescence, viz., the study of the individual as well as of the fever." (Philadelphia Medical News, Oct. 6, p. 391.)

Typhoid Fever in Infancy.

Dr. M. J. Keating, in the *Arch. of Pædiatrics*, says: This disease has been known to occur in infants during the first few weeks of life, but it is certainly rare under six months. Boys seem more liable to it than girls. As a rule it is less severe and considerably shorter in duration in the young than in adult life. Diarrhœa is far less common, the temperature does not run so high, tympanitis is not so marked, and the rash is frequently absent. Epistaxis is rare in childhood, and hemorrhage from the bowels is both less frequent and of less grave import. The spleen is very frequently enlarged. The nervous symptoms are less intense in infants than in later years. Among the complications, bronchitis is frequently met with, sometimes in a severe form, and croupous pneumonia is not very rare. Gangrene of the mouth occasionally follows severe cases; perforation of the bowel is very rare. The prognosis is much more favourable. The treatment is to be guided largely by common sense. Fluid food, cool sponging, avoidance of excess of feeding, and careful attention to the bowels are the chief indications. (Edinburgh Medical Journal, Jan., p. 672.)

AFFECTIONS OF THE NERVOUS SYSTEM.

ALCOHOLIC PARALYSIS.—Amenorrhœa in.

During the debate on Chronic Alcoholism at the Pathological Society, on Dec. 18, 1888, Dr. Buzzard drew attention to the fact that alongside of the complete immunity of the functions of the bladder and rectum usually observed in these cases, there was in females an almost constant suppression of the catamenia during the many months of illness usually involved. He had not seen any reference to the circumstance, which had forced itself upon his attention in numerous instances. (Lancet, Dec. 22, p. 1231.)

ARGYLL-ROBERTSON PUPIL.—An Evidence of Syphilitic Taint.

Among the motor palsies, one of the most important to the physician, although the least important to the patient, is the isolated loss of the light-reflex of the iris, with which the name of Argyll-Robertson is connected. I have notes of only twenty-two cases in which this symptom existed apart from other degenerative affections of the nervous system, but I believe that it is much less rare than this number might suggest. It is seldom looked for unless other symptoms suggest degenerative disease. Of these twenty-two cases, syphilis was certain in twelve, and highly probable in three others, while two more had a history of a venereal sore. In six cases there was no history or evidence of either syphilis or a chancre; nevertheless, two of them had had an attack of sudden hemiplegia in early adult life, without any indication of a cause of embolism—an event that always affords ground for suspecting syphilis. From these facts we may feel confident that syphilis existed in two-thirds of the cases, and we may suspect that it existed in three-quarters. One of the cases was a young girl, the subject of inherited syphilis, and another case was this girl's mother. The relation of this symptom to syphilis makes it one of great practical value. It proves that a degenerative process is at work in the nervous system, and it raises a strong presumption that this process is the result of syphilis. It is true the dependence of the symptom on central degeneration has not been proved by observation, but the evidence of this dependence is as strong as it can be short of actual observation. (Dr. Gowers' Lettsomian Lectures, Lancet, Jan. 12, p. 65.)

BRAIN.—Traumatic Subdural Abscess of.

Sir William Stokes concludes a paper on this subject with the following propositions:—(1) That after the primary symptoms of cerebral traumatism have subsided there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formations whatever. (2) That their appearance is, as a rule, sudden, and if uninterfered with they run a rapidly fatal course. (3) That the occurrence of pus production resulting from cerebral traumatisms is not incompatible with a per-

fectly apyrexial condition. (4) That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation. (5) That both as regards colour and consistence there is great variety in the contents of cerebral abscess cavities, and that, as shown in Wilm's case, published by Rose, of Berlin, they may become transparent. (6) That antisepticism has largely diminished the risks of the operation of trephining. (7) That, having regard to the great mortality of cases of cerebral abscess when uninterfered with—viz., from 90 to 100 per cent.—the operation is indicated even when the patient is *in extremis*. (8) That, in the case when the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed. (9) That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated. (10) That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation. (11) That drainage is desirable in the after-treatment of such cases. (12) That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required. (Sir William Stokes, Professor of Surgery, Royal College of Surgeons, Ireland, p. 286.)

CEREBRAL ARTERIES.—Syphilitic Disease of.

Apart from embolism and injury, hemiplegia coming on between twenty-five and forty-five is, I believe, very seldom due to any other cause than syphilis, and its occurrence may justly raise a strong suspicion of this disease, even in a case in which there is no positive evidence of it. But this suspicion is stronger in the case of men than in women, because in women, less rarely than in men, sudden hemiplegia clearly due to an organic lesion sometimes comes on when we can trace no source of embolism and when we can exclude syphilis. Now and then the onset is accompanied by that form of pyrexia which suggests septicæmia, and actual proof of this may be furnished by the characteristic retinal hemorrhages. A softened clot, in some situation, is probably then the most frequent cause of the symptoms, and the hemiplegia may be regarded as embolic. But there are other cases in which the onset is unaccompanied by any symptom to suggest embolism. I have seen several such cases in girls between eighteen and thirty, in whom from their history, character, and life, inherited or acquired syphilis could be absolutely excluded. The hypothesis of thrombosis in a healthy artery, due to some general condition, seems, perhaps, the least improbable explanation of such cases. But if the subject of such a palsy happens to be a girl of the lower classes, especially if she is good-looking, the diagnosis of probable syphilis is not unlikely to be made, and the more readily because we often cannot exclude the risk of infection in the case of unmarried females as we can in unmarried men. (Dr. W. R. Gowers, p. 161.)

CHOREA.—Etiology and Pathology of.

At the Nottingham Medico-Chirurgical Society, on Dec. 7, 1888, Dr. Handford gave a tabular statement of 154 cases that had been in the General Hospital within the last thirteen years. From these and from the very large number seen as out-patients, he expressed the opinion that chorea was unusually abundant in the Nottingham district. The table showed 2 deaths, and also that in the age and sex distribution the males were to the females as 1 to 2·4 before the age of fifteen, and as 1 to 4·5 after that age. Thus the liability of the female sex, already unduly great, nearly doubled after the age of puberty. Dr. Handford further expressed the opinion that the endocarditis of chorea, when not rheumatic, was chiefly, if not entirely, of mechanical origin. The endocarditis which was found almost, but not quite, invariably in fatal cases was of a special character. The numerous small vegetations, chiefly limited to the margins of the valves, with little if any general thickening, suggested that the invariable, abrupt, tumultuous, excited, cardiac action in a generally anæmic subject caused a bruising of the margins of the valves where they came into contact, and thus started the endocarditis. He looked upon the endocarditis as a comparatively trivial complication, as far as its immediate effects were concerned, and there seemed to be a pretty general consensus of opinion that it did not materially contribute to the fatal termination. The microscopic appearances in Mr. Powell's cases were illustrated by numerous drawings showing small hemorrhages, chiefly in the cord and pons, but also in the motor cortex; thrombosis of vessels with hemorrhage into the lymph sheath; rupture of the vessels in the commissure of the cord; and one vessel in which there was what appeared to be an incomplete embolus. No change was found in the nervous elements of the cord or brain. Dr. Handford expressed the opinion that all the symptoms of chorea were explicable on the hypothesis of a hyperæmia of the nervous centres, and he thought that this view of the pathology of chorea was amply borne out by the camera lucida drawings he had shown. Chorea appeared to be due in mild cases to a hyperæmia of the cord and perhaps the basal ganglia (the lowest and middle evolutionary levels), and where the mind was affected and insanity ensued the cerebrum (the highest level) had become involved. (Lancet, Jan. 5, p. 21.)

FRIEDREICH'S ATAXIA.—Definition of.

Friedreich's ataxia is a chronic, systemic inflammatory degeneration of the spinal cord, developing usually in infancy or childhood, in cases in which there has probably been an arrest of development of the cord during fœtal life; this being the result of some hereditary predisposition. It is situated chiefly in the posterior columns, the lateral and cerebellar tracts and the columns of Clarke, though other parts of the white and gray matter are very com-

monly somewhat affected, and the sclerosis extends slightly into the medulla. The affection is characterised clinically by a disturbance of the coördination of the bodily movements, developing gradually, advancing from below upward and finally involving the organs of speech. Curvature of the spine, talipes, vertigo and nystagmus are frequent. The patellar reflex is nearly always absent. Paralysis and slight sensory disturbances are not uncommon in advanced cases. Trophic, vaso-motor, and visceral affections are unusual, and any involvement of the intellect is probably accidental. (Dr. J. Crozer Griffith, American Journal, Oct., p. 377.)

Friedreich's Ataxia.—Diagnosis of.

The principal diagnostic symptoms of Friedreich's ataxia are: Evidences of hereditary influences, the occurrence of several cases in a family, early age of development, motor ataxia, static ataxia, affection of speech, nystagmus, talipes, curvature of the spine, some degree of paralysis; further, the absence of knee-jerk, of marked sensory, trophic, vaso-motor and visceral affections, of atrophy of the optic nerve and of affection of intellect. But, as in all diseases, the diagnosis must be based on the aggregation of symptoms rather than on individual ones. The affection is especially to be distinguished from tabes, disseminated sclerosis, and ataxic paraplegia. Tabes is recognised by its development in adult life and singly, by the occurrence of severe lancinating pain, of optic nerve atrophy, of alteration of the pupillary reflexes, and often of marked trophic and visceral affections; and by the absence of affection of speech and of nystagmus. The gait, too, often differs, as already described. Disseminated sclerosis is very exceptionally hereditary, usually develops at a more advanced age, and further differs in the presence of remissions, static nystagmus, rhythmic oscillations, ankle clonus, exaggerated knee-jerk, intention tremor and disturbance of intellect; and in the absence of Romberg's symptom. Ataxic paraplegia is distinguished by its occurrence in adult life and not in several members of a family; and by the presence of increased patellar reflex, and the absence of nystagmus, and of marked affection of speech. The symptoms of Friedreich's ataxia resemble those of cerebellar tumour only in a single particular, viz., the oscillating gait; and the disease can scarcely be confounded with hereditary chorea, since the latter has a distinctly different history and mode of termination, and exhibits no truly ataxic symptoms or diminution of the patellar reflex. (Dr. J. C. Griffith, Ibid, p. 377.)

[For Dr. Griffith's paper on the Etiology, Pathology, and Symptoms of Friedreich's Ataxia, see page 175 of this volume.]

HYSTERICAL LARYNGEAL AFFECTIONS.—Treatment.

Some of these affections are very intractable, and may require us to bring to bear all those principles of treatment which have been found serviceable in other forms of hysteria. Into these I need not

enter. Most cases of aphonia yield readily to suitable treatment. Derangements of health must be treated from the first. Iron and strychnia are often indicated. We must impress on the patient the absolute certainty that the aphonia can and will be cured. If laryngeal catarrh be present, we must apply suitable treatment, especially direct applications with the brush, which have a good moral effect. The preceding course, combined with occasional strong, peremptory exhortations to use the voice, will often succeed in effecting a cure. If not, faradism should be used externally,—or, better still, internally. A strong current should be used, and it is important that the first application should be attended with decided benefit, if not complete cure. In the treatment of the various kinds of stridor, it is advisable, once having made our diagnosis, not to exhibit to the patient too much concern or alarm. In some of these cases the dyspnœa is really alarming, but any sign on our part that we consider the case very serious or very extraordinary tends to aggravate the symptoms. In looking over the records of cases, one finds that tracheotomy has been performed in cases of stridor that were in all probability hysterical, and yet the tube had to go on being worn indefinitely. When urgent and persistent dyspnœa exists, inhalation of chloroform, short of anæsthesia, will relieve the symptoms. Otherwise the treatment of hysterical stridor and hysterical cough must be mainly of that kind which is beneficial in other hysterical maladies. Relapses are apt to occur in all these motor affections of the vocal cords, and it is by a judicious employment of general treatment, both physical and moral, rather than by local or special treatment, that relapses can be effectually guarded against. (Dr. J. Ball, p. 186.)

NARCOTIC POISONING.—Employment of Strychnine Hypodermically as an Antidote in.

In the cases of narcotic poisoning which have come under my own personal notice during the last three years, strychnine has been used hypodermically when there has been any irregularity or interruption of the breathing, which appeared to threaten a failure of the respiratory centre. The effect of the drug is immediately shown by the increased rate, more regular rhythm, and greater depth of the respirations, and even in cases where the breathing has ceased it has again commenced after the administration of the strychnine. The most convenient form in which strychnine may be employed is undoubtedly that of the "hypodermic tabloids," introduced a few years ago by Messrs. Burroughs, Wellcome, and Co., in which the alkaloid is combined with sulphuric acid as a sulphate. These tabloids, as any one may easily satisfy himself, keep perfectly, and are therefore much better than solutions in this respect. They are kept in the same case as the syringe; they can thus be laid hold of at a moment's notice, and time is accordingly saved. They have further the advantage of being quickly dissolved by trituration with

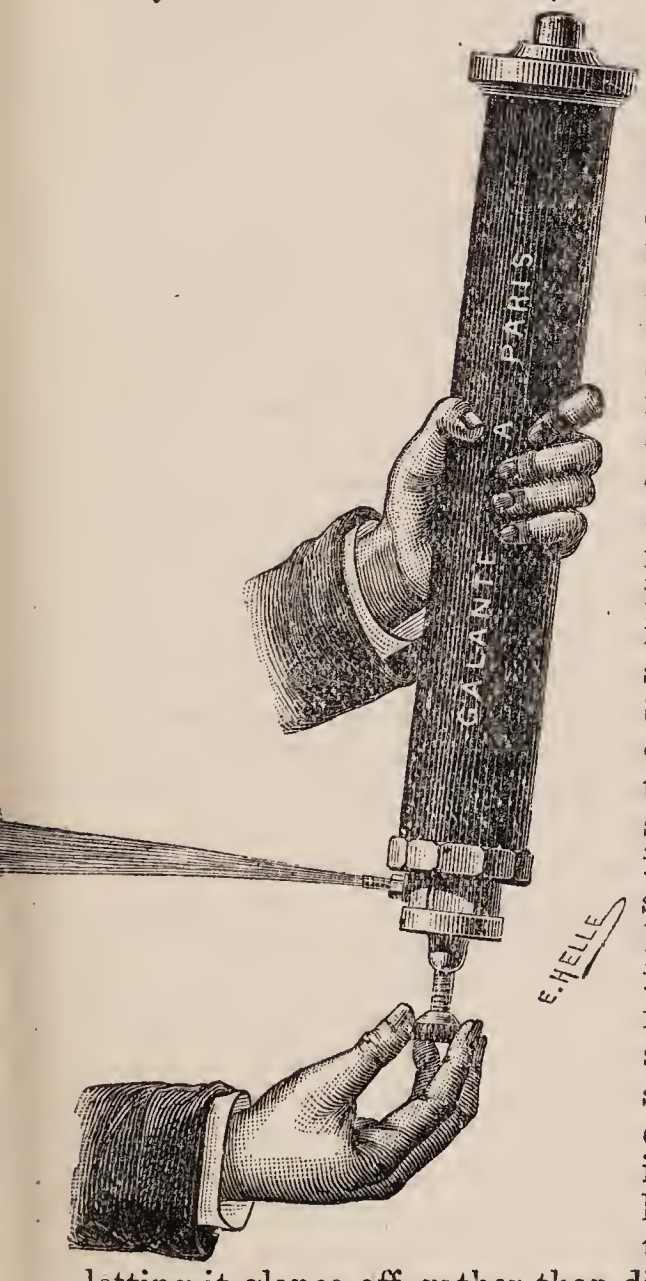
a few drops of water in the small glass mortar supplied with them. (Dr. G. A. Gibson, p. 187.)

NERVE GRAFTING.—Successful Case of.

At the Clinical Society, on January 25th, 1889, Mr. Mayo Robson showed a girl, aged fourteen, on whom he had successfully grafted two inches and a half of the posterior tibial nerve into a corresponding gap in the median nerve in the forearm. He also showed the tumour, which had involved the median nerve and had necessitated its removal. The history of the case, briefly, was that the patient had noticed the tumour growing for six years, but that it had grown more rapidly during the past twelve months, during which time it had caused considerable inconvenience as well as deformity. The tumour, about the size of a hen's egg, extended from the annular ligament in front of the right wrist up the forearm for about three inches, reaching laterally from side to side, the skin being firmly stretched over but not adherent to the tumour, which appeared to be solid or semi-solid. On making an incision over the swelling the tumour bulged through the wound, and was easily separated from its cellular bed, leaving the mass attached above and below to a cord, which appeared to be inseparably blended with it. The attachments had therefore to be cut through. A microscopic examination showed that the cord was composed of nerve tissue, and on the patient recovering from the anæsthetic the parts in the hand supplied by the median nerve were found to be devoid of sensation. Arrangements were made by Mr. Robson to graft the sciatic nerve of a rabbit into the gap of the median nerve, but fortunately his colleague, Mr. Ward, kindly allowed him to arrange his operation at the same time that he was amputating a thigh, and to utilise the posterior tibial nerve, which was taken straight from the amputated leg into the prepared forearm, the transfer from one theatre to the other being made in a warm carbolic solution. Two inches and a half of nerve were utilised, the ends being attached to the proximal and distal portions of the median with a fine catgut suture, without the slightest tension either on the stitches or the nerve; the wound was well washed out with perchloride of mercury lotion and carefully sutured. Healing occurred by first intention. The grafting was performed forty-eight hours after the tumour had been removed, and thirty-six hours after the nerve had been grafted, sensation had so far returned in the parts supplied by the median that the touch of a pencil could be localised. Day by day sensation became more and more distinct, until, when shown to the members of the Leeds and West Riding Medico-Chirurgical Society, five weeks after the operation, it was so perfect that the slightest touch could be localised, and although there was manifest diminution in volume of the abductor and flexor brevis pollicis, they were not completely paralysed. (Lancet, Feb. 2, p. 224.)

NEURALGIA.—Chloride of Methyl Spray in.

Since Dr. Debove showed how valuable the spray of liquefied chloride of methyl gas was in the topical treatment of various neuralgias, the literature of the subject has grown considerably, and many cases of cure resulting from the application of the spray to the skin over the neuralgic area have been recorded. The gas, however, had to be liquefied by pressure, and the cylinders containing it were bulky and complicated. Galante et Fils, of Paris, have lately made for Dr. Debove (Feb. 1888) a small portable cylinder which has brought the method into general use in France. The cylinder is represented in the engraving, and the reader will notice that by turning a milled headed screw at the bottom of the apparatus a fine spray jets out from an aperture just above it. The spray can be regulated to a nicety by the screw. A correspondent, who has recently tested the method (the charged cylinders being courteously supplied by Messrs. Christy and Co., of 25, Lime-street, E.C.), reports that he has employed it in over fifty cases with the following result: "The action of the spray upon the skin is remarkable. Such intense cold is instantaneously developed that, directly the chloride of methyl touches the skin, the latter becomes hard, iced-white, and frozen. At the same time the patient feels as if he had been touched with a hot iron. Two seconds, or at the most five, are quite long enough for its application to any one patch of skin, for the skin will rapidly vesicate, and even become gangrenous, if the spray is continued for a longer period. It is better to play the spray *obliquely* over the skin, letting it glance off, rather than direct it straight at and in close proximity to the part. It has been used in France for extracting teeth painlessly, also in minor operations for local anæsthesia, and is recommended for trigeminal neuralgia. Concerning the last, I would at once dissuade others from using it upon the face, for the



application leaves a most disfiguring brown colouration, which takes a long time to fade. Of its value in the treatment of neuralgia there is no question. I have taken fifty cases of various neuralgias of the neck, back, testicle, urethra, and legs, and have relieved many temporarily and some permanently by its use. It is a rapid and effective vesicant, and has proved of value as a substitute for the often useful plan of 'firing' joints. As a 'moral' force in neuromimesis and malingering it will doubtless be most persuasive." (Lancet, Jan. 26, p. 190.)

PARALYSIS.—Subcutaneous Injection of Strychnine in. I am under the impression that strychnine is not often administered subcutaneously. Dr. Habershon has advocated its use thus in cases of cardiac failure, and during the past year I have had three troublesome cases of more or less general paralysis that have, for such cases, rapidly improved by its means. One was a case of peripheral neuritis due to alcohol and lead-poisoning combined. He was in a very tremulous condition when admitted. Many of his muscles were much wasted. He had a good deal of pain in the course of various nerves, and he was both sleepless and demented. Various drugs were administered, and he was assiduously galvanised, but he became decidedly more powerless. By-the-bye he had a subcutaneous injection of hydriodate of hyoscine, first $\frac{1}{200}$ of a grain and then $\frac{1}{100}$, and this certainly seemed to quiet his nocturnal delirium, and procure him sleep. On November 4th I ordered him $\frac{1}{60}$ grain of strychnine to be injected hypodermically twice daily. On the 14th it was increased to $\frac{1}{50}$, and by the 31st he was taking $\frac{1}{34}$ twice daily. By this time it was noted that the movements of the patient's hands and arms were much more lively, and there was a gain in the grasping power of both hands. From this time he made continuous improvement. The injection was continued for another month, and was then omitted, chiefly because it caused, or he thought it did, severe pain in his ulnar nerves, which, he insisted, came on soon after the injection, and caused him great misery for several hours afterwards. He had had this pain before the commencement of the injections, and my clerk, Mr. McIlwaine, had doubts about the reality of the cause, but the man was very positive, and I think he was very probably correct. His ulnar nerves were clearly those most affected by his disease, and it is fair, therefore, to suppose that the remedy acted upon them in excess. A second case was one of general paralysis, dysphagia, diaphragmatic palsy, and reaction of degeneration in the muscles in a young man aged 27. All the history that he could give was that, being a carman, and of late carrying sacks of coal, he had, a month before his admission, felt generally out of sorts and easily fatigued. A week later his finger-tips became numb, and then his toes, and gradually he lost all power in his legs, and then in his arms. He was at first given iodide and perchloride of mercury, and he steadily got worse.

Then he had three-minim doses of liq. strychniæ given internally; but, as he was steadily going down hill, and was swallowing and breathing so badly that I quite feared for his life, I changed the internal administration of strychnine to the hypodermic method after a week. He had $\frac{1}{50}$ grain injected night and morning. This was commenced on the fifth, and on the ninth the report stated that there was a marked improvement in the strength of the right arm, and there was considerable improvement in sensation. By the thirteenth he was beginning to have slight control over his legs. His pains, before rather troublesome, were not so severe, and the patient seemed altogether better; and he rapidly improved from that time, so that at the end of a month he was able to get up and about feebly. He is now, many months later, quite well. It might be added that the real nature of the case still remains obscure to me. The completeness of the paralysis, coupled with his occupation, and a doubtful thickening and prominence over the second cervical vertebra, made me think at first of some cervical pachymeningitis, but I subsequently inclined more to the diagnosis of peripheral neuritis, albeit the cause of it could not even be suggested. (Dr. J. F. Goodhart, British Med. Jour., Jan. 19, p. 121.)

PERIPHERAL NEURITIS.—Conditions Associated with.

The second number of the *Archives de Médecine Expérimentale* contains three papers bearing on the subject of peripheral neuritis. The first, by MM. A. Joffroy and Ch. Achard, adds one more to the growing catalogue of conditions associated causally with this affection. It is based on the record of a case in which well-marked symptoms—as persistent and severe pain, followed by muscular paresis, and wasting of all the extremities—occurred about nine months before the patient's death from an attack of cerebral hemorrhage and pneumonia. Degeneration of nerve fibres was found in the main nerve trunks of the limbs in varying degree, but in all more marked in the peripheral nerves. In addition, there was found obliterating arteritis in the nerves—e.g., in the sciatic,—and it was to the resulting loss of nutrition that the "neuritis" was attributed. Indeed, a parallel is drawn between the changes thereby produced in a nerve trunk and those of cerebral softening from arterial thrombosis. It is remarked that, had the patient not succumbed to pneumonia, senile gangrene would have developed, and might have been referred erroneously to the neuritis; whereas both conditions would have owned the same origin—viz., obliterating arteritis. The next paper, by the same authors, deals with a case of tabes, complicated with cutaneous gangrene, in the left great toe, but with neuritic changes far more marked in the nerves supplying some of the other toes. Hence the writers do not attribute the gangrene to the neuritis, nor could they assign pressure as its cause; but refer the gangrene as well as the neuritis to the disease of the

cord. Another factor in the production of peripheral neuritis in this case was the presence of tuberculosis, from the effects of which the patient died. The third paper, by MM. Dejérine and Sollier, comes as an instructive pendant to the foregoing, since it deals with the subject of "peripheral tabes," to which M. Dejérine had previously drawn attention. The case was one of a man fifty-four years of age, who for fifteen years had suffered from incöordination of the lower limbs, marked lightning pain, and disturbance of sensation. The patellar reflex was, however, present. This patient also died from phthisis. The spinal cord and nerve roots were found to be healthy, but there was very marked peripheral neuritis, especially in the cutaneous nerves of the lower limbs, less marked in the muscular nerves, and slight in the cutaneous nerves of the hands. The sciatic nerves were quite normal. It is pointed out that the recognition of peripheral tabes, due to neuritis, involving mainly sensory nerves, is of practical value, since peripheral neuritis is often curable. The etiology of the case was obscure, neither alcoholism nor tuberculosis (although both had at one time or another been present) accounting for it. (Lancet, March 16, p. 543.)

Peripheral Neuritis.—Syphilis as a Cause of.

Very little is definitely known of inflammation of the cranial nerves that is pathologically specific. These nerves are often damaged by gummata, and especially by chronic meningitis at the base of the brain; but there is also strong reason to believe that they are often the seat of syphilitic inflammation, involving the sheath and interstitial tissue. From the meagre facts that are available, it is probable that this inflammation is usually hyperplastic in such a degree as to be recognisably specific, but we must wait for more data before we can affirm the fact with confidence. It is remarkable that the peripheral parts of the spinal nerves very seldom suffer. The discovery of the susceptibility of these nerves to various toxic influences has revealed no liability for them to be influenced by syphilis. (Dr. Gowers's Lettsomian Lectures, Lancet, Jan. 12, p. 61.)

PERSISTING APTYALISM.—(Persistent Dry Mouth.)

At the Clinical Society, on Oct. 26, 1888, Mr. Jonathan Hutchinson read a paper on Persisting Aptyalism ("dry mouth"). The paper consisted chiefly in the narrative of another case of what has been named dry mouth. The subject was a lady of fifty, a widow in good general health, but who had passed through much trouble. The condition of aptyalism came on without any definite cause, and not very suddenly. In the course of a few months her tongue, cheeks, lips, and palate became absolutely dry. They had remained in this condition without any alleviation for about four years. The tongue was clean, red, and much sulcated. Its dryness was such that the lady had difficulty in making herself understood in talking. The pharynx was also dry, but there was no defect of secretion in

the nose, and no difficulty in the flow of tears or of moisture in the conjunctivæ. She perspired freely, and, indeed, her face and forehead were liable to perspire on any slight emotional excitement. Mr. Hutchinson gave a brief summary of the cases previously recorded, five in number, and remarked upon the very close similarity which they bore to each other. The first case, to which the name had been applied, was one brought forward by himself at the Clinical Society two years ago. The subject had been ably investigated by Dr. Hadden last year, who then brought forward a second case at this Society and narrated the particulars of two others. One of the latter was recorded by an anonymous writer under the name of suppression of the saliva in the *Med. Times and Gazette*, as far back as Nov. 1868. In all these five cases the patients were women past middle age, and in all the condition, having once begun, had proved to be persistent, whilst in none had it been the precursor of any other disorder of the nervous system. Although the condition had persisted for three or four years, up to the present date there had been no material depreciation of the patient's health, a fact of some interest when it is remembered that the salivation of the food was completely arrested. Dr. Hadden had recorded in his case some benefit from the persistent use of jaborandi. This remedy had been tried for short periods in the author's first case, but without obvious benefit. In his second case he had only seen the patient once, but she had previously been under much treatment, and had probably tried that drug without definite benefit. The disease was, he remarked, evidently a very definite one, and probably no doubt a number of cases of it would soon be placed on record, Its essence consisted in a complete and seemingly permanent arrest of all salivary and buccal secretion. He proposed as a more accurately descriptive term the name of "persisting aptyalism." (Lancet, Nov. 3, p. 868.)

SULPHONAL.—A New Hypnotic.

Sulphonal, diethylsulphon-dimethyl-methane, $(CH_3)_2=C=(SO_2 C_2H_5)_2$, comes to us as a new hypnotic, with all the recommendations and the absence of disadvantages for which we are now prepared in connection with the introduction of therapeutic novelties. Sulphonal is represented as being free from taste and odour, as assisting and inducing sleep, and as being entirely innocent of unfavourable effects during and after its hypnotic influence, even in disease of the heart. Both Kast and Rabbas speak highly of the drug. The latter has tried sulphonal particularly in the insomnia and excitement of the insane, and goes so far as to propose to put the new remedy at the very head of all the hypnotics. Sulphonal is a white crystalline powder, but slightly soluble in water; given in doses of 1 to 4 grammes (about 15 to 60 grains) floated on water. It rarely disappoints expectations; it is least satisfactory in the more severe forms of mania. Sleep usually comes on within half an hour—seldom later than one or two hours, and lasts unbroken for six or

eight hours. It may continue indeed for several hours in the forenoon, and not unfrequently it leaves behind it a quiet condition during the day. The sleep is perfectly rational, neither accompanied nor followed by unfavourable complications. Tolerance does not appear to become established, so that the dose (average 2 grammes) does not require to be increased. Comparative observations with methane, paraldehyde, etc., even in large doses, were favourable to sulphonal. Sometimes indeed it acted promptly where chloral had failed, and whilst chloral appears to be the only rival of the new hypnotic, sulphonal is free from the serious objections to the other drug from the side of the circulation. Inasmuch as sulphonal is comparatively slow but prolonged in its action, it is possibly but slowly absorbed (being so insoluble) and its action but gradually developed. It is possible the repeated small doses—say ½ gramme every two hours—may diminish or completely remove conditions of excitement in the insane. (*Centrblt. Klin. Med.*; Pract., Oct., p. 297.)

Sulphonal.—Administration of.

In the *Therap. Monatshefte* of July 2, 1888, Kast, the discoverer of sulphonal, gives some experimental conclusions directed to the point of the retarded activity of sulphonal. From published papers (Cf. Lovegrove, *Brit. Med. Journal*, 1888, p. 1112) and private communications he has learned that many have found that the primary hypnotic action is postponed too long—*i.e.*, two or three hours or more, and that the effect lasts longer than is wished—*i.e.*, into the succeeding day. Two important qualities distinguish sulphonal, he observes: First, its insolubility; second, its resistance to chemical change. Sulphonal is soluble, he finds, by exact estimation in eighteen or twenty parts of boiling water, but it recrystallizes on cooling. At blood-heat, 450 parts of water are necessary to dissolve one part of sulphonal. Addition of salts considerably increases its solubility—thus it is easily soluble in concentrated mineral water. The addition of an amount of hydrochloric acid, corresponding to the proportion in the gastric juice, increases its solubility one-half. In artificial gastric juice it is soluble 1:200, at the temperature of the body, and it was not reprecipitated for several hours after neutralizing. Peptones prevented the reprecipitation of a very concentrated solution made in hot water. As to the absorption, Kast found that very small quantities of sulphonal were present in the intestine of a dog killed two hours after the ingestion. After six hours none could be demonstrated in the gastro-intestinal tract, but small quantities were found present in the blood. These facts lead to the determination of the best method of administration. This should be in a good quantity of warm water in the early evening hours, and best with the supper. In this way advantage is taken of those conditions favouring a rapid solution, viz., a fairly large quantity of water with a good proportion of hydrochloric acid, and salts and peptones in rich abundance. (American Journal, Nov., p. 508.)

Sulphonal in the Insomnia of Mental Disorders.

A. Cramer (*Neurolog. Centralblatt*, 1888) reports the results of 407 administrations of sulphonal to forty-five patients with various mental disorders. 30 times there was no result; 377 times sleep lasting five or more hours was produced, usually one-quarter to one hour after the medicine had been taken. The dose varied from one to three grammes. Unpleasant secondary effects were only observed in one instance, and consisted merely in some sleepiness on the following morning. The author then instituted experiments to determine whether the drug possessed any disturbing influence on the diastasic action of saliva, and on the power of artificially prepared gastric and pancreatic secretions to digest fibrin. The results showed such power to be absent.

Rabbas (*Berliner klin. Wochens.*, 1888) has also obtained only good results with sulphonal in the insomnia of mental disorders. In doses of two to three grammes it acts better than either amyl hydrate or paraldehyde; and though sleep is produced by chloral more promptly, it does not last so long. He has found the remedy efficient in the worst maniacal conditions where chloral and paraldehyde had proved unavailing. Most of the twenty-seven cases to whom the medicament was given 220 times were instances of mania and melancholia. (American Journal, Oct., p. 407.)

Sulphonal.—Case of Poisoning by.

Dr. Bornemann records in the *Deutsche Med. Zeitung*, the following case of sulphonal poisoning: A physician, addicted to the morphine habit, which he had acquired in trying to overcome headache during the past twenty-eight years, and who had visited ten "cure-institutions," came at last into the institution of Dr. Bornemann. On the evening of the 10th of May, the patient took for the first time thirty grains of sulphonal, without effect, and it was only after a second dose of fifteen grains, and one-third of a grain of morphia subcutaneously, that he fell into a sound sleep of eight hours duration. May 11th, forty-five grains of sulphonal were given at bed-time, without morphia; he slept till morning. May 12th, one-third of a grain of morphia, at bedtime sixty grains of sulphonal; no sleep. During the same night (1 a.m.), thirty grains of sulphonal; no sleep. Patient left his bed, acted like a drunken man, and fell several times; and when attempting to take hold of an object, he would miss it. Pupils contracted. On the morning of May 11th, patient slept four hours. Even while in bed he believed himself drunk. On the same evening, he complained of the sensation of having two heads, two pairs of arms, and double vision. From that time on, the administration of sulphonal was discontinued, although patient kept constantly asking for it. It was not until May 18th that all apparent symptoms of poisoning disappeared. (*Wiener Med. Presse;* Medical News, Jan. 5, p. 14.)

SYPHILITIC DISEASES of the Nervous System.—Prognosis in.

Syphilitic growths, gummata, can be removed more completely than any other lesion; and, when their influence is exerted by simple lateral pressure, the resulting damage to the nerve structure is recovered from in the most complete degree. Hence in such cases the prognosis is good, unless the duration of the damage is very long and its degree is very great. When the growth infiltrates, however, the problem becomes similar to those met with in some inflammations. In all forms of meningitis the prognosis is good, except in so far as relates to the damage to nerves and nerve roots which are surrounded by the newly formed tissue, and also the damage to the spinal cord when the dura mater is greatly thickened. In all these cases the effects and the symptoms commonly lessen up to the point when the contraction of the tissue comes into operation. The effects of the inflammatory damage and of the early compression lessen, but a residuum remains in most cases, and is increased in some of them, although further improvement is not uncommon; after a time some permanent effects may remain. When there is reason to suspect inflammation of the cranial nerves—syphilitic neuritis—the prognosis is chiefly influenced by the duration of the morbid process. If the inflammatory products are in such a stage that they can be removed, the prognosis is good if the damaged nerve fibres will recover conducting power. If, however, there is reason to suspect cicatricial transformation of the new formation into fibroid tissue, it is improbable that the degree of improvement will be sufficient to permit severe symptoms to pass away entirely. The same general prognosis is true also of infiltrating growths. In true acute inflammation that is treated early and arrested early, the prognosis is the same as in similar inflammations that are not specific. The recovery or persistence of the symptoms depends on the recovery or persistence of the changes in the nerve elements which are produced by an intense inflammation, and thus are simple and not specific. (Dr. W. R. Gowers, p. 163; and Lancet, Feb. 9, p. 261.)

Syphilitic Affections of the Nervous System.—Cautions to be Observed in the Treatment of.

There are two points in the treatment of syphilitic diseases of the nervous system on which I think a word of caution is urgently needed. The first is regarding the prolonged administration of anti-syphilitic drugs, especially of iodide of potassium. By "prolonged" I mean exceeding from six to ten weeks. I believe that full doses in this time will effect all that it can achieve in the removal of the syphilitic process. Here, as I have just said, we want facts that are visible, numerous, and carefully observed, to guide us in our conclusion. I do not say that the symptoms will have disappeared. It cannot be too firmly remembered that symp-

toms are due to changes that are not syphilitic, changes in the nerve elements secondary to the syphilitic disease, but so far independent in course that they may persist long after the specific lesion is at an end. Hence the fact that the symptoms have not yet ceased is no indication that the specific lesion is not entirely removed. Here, then, I would range myself with the minority—a minority that is fast growing in size, especially in Germany,—who hold that the long-continued treatment by small doses of mercury or iodide is a mistake, great and dangerous; who hold that treatment of any true specific lesion should be energetic, but should continue only a little longer than is necessary to remove the lesion; repeated it may be after an interval occupied by tonic treatment or by the other of the two chief drugs. If iodide is continued, as it often is, during many months (and much more, as it sometimes is, during years), there is a danger that the system tissues of the patient may become so accustomed to its presence that the drug may no longer hold in check the syphilitic processes. Probably we may still influence the lesions by increasing the dose, but this process must have limits in practice, if not in theory. Such prolonged and augmented treatment may do definite injury to the patient's health, and even then fail to effect the desired object. If the poison is an organised virus, we might *a priori* expect this result. By long-continued, gradual alteration in the conditions, low organisms, as Dallinger has shown in his remarkable experiments, can be made to endure influences that would at first be fatal to them. By slowly raising the temperature, they will not only live but flourish at a degree of heat which, had it not been for their acclimatisation, would have killed them in a few minutes. But the question is not one in which we can be guided by theory, far less by an analogy, possibly remote. There is, moreover, a positive danger in this method. It is also great in the practice to which I referred at the beginning of the lecture—that of repeated courses of energetic treatment to remove residual symptoms that cannot be thus removed, because they do not depend on any residual specific process. (Dr. W. R. Gowers, p. 169.)

TABES DORSALIS.—Syphilitic History in Cases of.

The proportion of cases of tabes in which syphilis has to be traced by different investigators has varied much—from 90 per cent. down to a proportion that has been held to be not far above the range of accidental association. Instead of detailing to you the various statements that have been made, it may be more instructive to give the figures supplied by a consecutive and unselected series of cases that has come under my own observation. Of 170 cases of characteristic tabes in males, there was evidence of syphilis (in a few confined to a chancre certainly hard) in 55 per cent. In another 14 per cent. there was a history of a sore only, of unknown

nature. In only 31 per cent. could neither be ascertained. Of the 170, 92 were seen in private and 78 were hospital patients. The percentage of syphilis in the private cases was 57, in the hospital patients 52. Probably the difference is due to the more accurate information to be obtained from those who are more likely to notice and remember such diseases. It is remarkable, however, that the proportion between the cases of syphilis and the cases without even a chancre is exactly the same in the two sets as 11 to 6. The difference in the percentage arises from the fact that a history of a sore of unknown nature was almost twice as frequent among the hospital as among the private patients. In either series, the addition to the syphilitics of one quarter of the cases of chancre will give about 60 per cent., and a deduction for mere accidental coincidence would leave at least 55 per cent. of unquestionable causation. But it is certain that to this a large addition must be made for untraceable syphilis. These figures are obtained by placing all doubtful cases on the negative side, including many with a strong presumption of syphilis. If it is true that latent syphilis is common, and if the disease can be proved to be a cause of tabes in more than half the cases, is it not almost certain that a large proportion of the remainder are really due to it? In most of them no other cause could be traced. In not more than 5 per cent. of the whole had there been no exposure to the risk of infection. Although the *method* which discloses syphilis in an exceedingly large proportion of the cases may be open to question, I cannot but think that the observers who describe it in 75 or 80 per cent. are not far from the real truth. (Dr. Gowers's Lettsomian Lectures, Lancet, Jan. 12, p. 64.)

Tabes Dorsalis.—Its Treatment by Suspension.

A singular method of treating cases of locomotor ataxy has, during the past three months, been tried at the Salpétrière, and the results have been so satisfactory that M. Charcot recently devoted one of his lectures (*Progrès Médical*, Jan. 19th) to the subject, demonstrating the cases so dealt with. The practice is not absolutely novel, since in 1883 it was brought forward by Motchoukowsky of Odessa, who claimed that twelve tabetics had been greatly benefited by it, and also that the plan was of use in cases of sexual impotency apart from tabes. Last year M. Raymond, when on a visit to Russia, heard of the practice, and introduced it to M. Charcot's notice, and, as above said, it has been adopted in M. Charcot's wards during the past three months, the "chef de clinique," M. Gilles de la Tourette, superintending it. It simply consists in suspending the patient by means of Sayre's apparatus for a period beginning with a duration of half a minute and progressively increasing up to three or at the most four minutes, an interval of two days occurring between each suspension. In order to exert greater traction on the spinal column, it is well to raise the arms every

fifteen or twenty seconds. Eighteen tabetics have thus been treated, embracing about 400 "suspensions." Excluding four who were not suspended more than three times, the improvement was marked in fourteen, and eight of these most remarkably. They were all confirmed cases, and had mostly been treated by cauterisation along the spine. Almost from the commencement of the suspension treatment the patients would improve in walking—an improvement at first temporary, but after eight or ten suspensions becoming continuous. They could then stand more easily, and walk without assistance. After twenty or thirty suspensions Romberg's symptom disappeared. There was also relief from vesical troubles, when these existed; diminution and even disappearance of lightning pains; return of sexual desire and capacity. Anæsthetic and other sensory disturbances also disappeared, and the general condition of the patient improved, sleep being better, &c. One case had a return of lightning pains whilst being treated, but subsequently again underwent improvement, which in all the rest was uninterrupted. In no case did the knee-jerk return, or the pupil reaction become normal. The method has also been applied to a few non-tabetic cases, as Friedreich's disease, neurasthenia, and disseminated sclerosis; but, as M. Charcot observes, the method is still in the experimental stage. So far the results in tabes are encouraging, whilst the simplicity and harmlessness of the method are additional recommendations for its further trial. (Lancet, Jan. 26, p. 183.)

Tabes Dorsalis.—Case Treated by Suspension. (*Dr. de Watteville.*) The fact that tabes dorsalis may grow suddenly worse is of importance in considering the value of the suspension treatment, because at least one case has been referred to as having been made worse by the treatment. It cannot be too strongly urged that the utmost care is necessary in commencing the treatment, and it is possible that suspension without the aid of the armpit straps is too violent a measure at any period in the treatment of the disease. At the invitation of Dr. de Watteville, we have had an opportunity of examining one of the cases under his care at St. Mary's Hospital, the said patient having been under treatment by suspension for six weeks, being, we are informed, the first patient in England on whom the new means of treatment has been tried. In regard to this case no doubt of the nature of the affection can exist, though whether the disease is due to a condition of the nerves or more central fibres in the cord and brain cannot be decided. The patient is a man aged thirty-nine, married, and a carpenter by trade. He is said to have had rheumatic fever ten years ago, and at times since; but questioning the patient left it doubtful whether these symptoms were not of spinal origin, and therefore signs of the disease from which the man still suffers. In 1877 the patient remembers to have first noticed something wrong with his legs, and

in the Christmas of that year he caught a severe cold, which laid him up all through the summer of 1878. In 1879 he suffered from vomiting and diarrhœa, began to see double, and the legs became worse; then shooting pains made life miserable, bladder troubles set in, and the disease steadily advanced. At the present time the man is somewhat anxious-looking and very thin. He could not stand at all with his eyes shut, but he can now, although unsteadily. He was very much more steady both in walking and in working at his trade than he had been previously to the commencement of the treatment by suspension. He had not been able to walk at all without the aid of two sticks for many months before January of this year, but he recently walked three miles and a half without experiencing a sensation of fatigue. The improvement in the gait has been slowly going on during the treatment. Another important amendment has been the almost entire disappearance of the lightning pains. Since the treatment has been begun there have been nocturnal erections of the penis, which had not been the case for years. These erections partake of the nature of "spermatic crises" so characteristic of spinal cord disease. Charcot has noted them in his series of cases treated by suspension. That this patient has been benefited by the treatment neither Dr. de Watteville nor others who have followed the case throughout have any doubt. The man himself also feels much improved by it. Suspension has been practised for from thirty to fifty seconds twice a week, axillary straps being always used. Dr. de Watteville is of opinion that suspension by the head alone should never be practised until the other mode has been frequently practised first. In the present early stage of the trial of the remedy it is obvious that caution must be exercised in forming an opinion of its efficacy. (Lancet, March 16, p. 551.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANGINA PECTORIS.—Its Nature and Treatment.

This affection is the result of various pathological changes, and its mode of production is therefore somewhat diverse. But in this place the only form of angina pectoris which can be discussed in this connection is that which depends upon irritation of the vasomotor system, the affection known in Germany as *angina pectoris vasomotoria*. In the typical form of this affection there is high arterial tension, which alone is enough to distinguish it from almost all other forms of angina pectoris, with pallor and coldness of the surface and an excited frequent pulse, caused by the struggle to overcome the obstacle to the passage of the blood into the capillaries which results from the contraction of the arteries throughout the body. It might be expected that the pulse should be infrequent with high tension, but it must be remembered that in all

true cases of angina pectoris the heart is enfeebled. At times the vascular contraction may be local, but in by far the larger number of cases the arterial spasm is general. Brief reference may be made to the means by which the excitement of the vaso-motor centre and the spasm of the vessels may be removed. For rapid effects, no drug is to be compared to nitrite of amyl administered by inhalation, and for slower but more lasting influence nitro-glycerine is equally reliable, while spirit of nitrous ether is in many cases a most useful preparation in the affections we have been considering. The tropeïne series of drugs must not be passed over in silence, as belladonna, stramonium, and hyoscyamus, as well as their alkaloids, possess considerable efficacy in such cases, and lobelia and tobacco may be found of use in certain instances. We may also fall back upon chloral and several products of distillation, especially chloroform and ether, if any of the substances just mentioned cannot be employed in the treatment of such affections. (Dr. G. A. Gibson, Edinburgh Med. Journal, Dec., p. 534.)

CAFFEINE.—Combinations and Double Salts of.

Caffeine itself is advantageously administered, as was, I think, first suggested by Tanret, in combination with benzoate of sodium in solution. I have found a grain of each of these drugs mixed with syrup of orange flowers, or of orange-peel, and water, each half a drachm, a good formula. Some of the new salts which are very soluble, such as the cinnamate or the phtalate, are also easily given. The former of these, as the sodio-cinnamate, contains sixty-two per cent. of caffeine; the latter fifty-six per cent., and is soluble in five parts of water. Both are adapted to hypodermic use; so is the sodio-salicylate. (Dr. Da Costa, American Journal, Nov., p. 449.)

DIGITALIS.—The Value of the Substitutes for.

I have tried them all, and I believe there is not one which is as trustworthy, as valuable; not one is at the same time so good a cardiac tonic and a diuretic. But undoubtedly digitalis cannot be kept up uninterruptedly, and it is apt to produce, after a time, derangement of the digestive organs. Some cannot take it at all; and as in any form of tonic, so with this cardiac tonic, we get better results by occasional change. I hold caffeine, strophanthus, and adonidine to be the best substitutes. From adonidine I have witnessed, in one-tenth to one-fifth of a grain doses three times a day, some admirable results; but more in cases of functional than of valvular disease of the heart. Yet even here I have known it to act as an excellent heart regulator. So does strophanthus, which I have, moreover, often seen strikingly influence irregularity, and dyspnœa. Its action is very rapid, but not so permanent as that of digitalis, and though much is claimed for it as a diuretic, its influence in this respect is inferior both to digitalis and to caffeine. It would seem specially applicable to cases with defective power and high arterial tension,

as sometimes met with in the heart lesions of Bright's disease; but from actual experience I am not yet certain on this point. Convallaria has, on the whole, disappointed me in the treatment of valvular disease, though I think it is of value in palpitation of the heart and in other forms of functional disorder. Cocaine answers very well in some cases; it is certainly both a cardiac stimulant and tonic, and not devoid of diuretic powers. (Dr. Da Costa, American Journal, Nov., p. 450.)

CARDIAC ASTHMA.—(FRAENKEL, *Berliner Klin. Wochenshrift.*) Fraenkel says that dyspnœa appears in very different forms in the different heart diseases, depending upon the nature of the affection. It is sometimes admonitory, but is then slight and only occasional; and disregarding this, we may distinguish two forms of severe dyspnœa, the *continual* and the *asthmatic*. Cardiac asthma, on the other hand, is seen most typically in hypertrophy of the left ventricle with abnormal resistance in the bloodvessels, resulting from arterio-sclerosis. The asthmatic attack comes quite suddenly and usually at night, waking the patient from sleep, and is generally very severe. The lungs are found full of coarse râles, and respiratory pauses may occur like those of Cheyne-Stokes respiration. The affection often resembles bronchial asthma greatly, but may be distinguished by the high tension of the vessels, the absence of expiratory dyspnœa, and often by the discovery of a dilated left ventricle, though this is not always easily detected, owing to an increase in the volume of the lungs. This enlargement is due to the fact that through the narrowing of the arteries the blood is driven into the venous system, or, rather, into the lungs and the left auricle. Hence there is a permanent engorgement of the pulmonary circulation, even when there is complete compensation. The sudden asthmatic attacks are probably due to a sudden temporary insufficiency of the left ventricle, brought about by psychic emotion, increasing catarrh, or some other cause. The heart is already doing its utmost, and this disturbance of the balance produces increased passive congestion and consequent dyspnœa. Autopsies have shown that the heart muscle is of normal structure, and it would, therefore, seem likely that the failure is due to paralysis of the cardiac nerves or ganglia. Regarding the therapeutics, the author repeats what he has formerly said in praise of morphia and digitalis in combination. The former diminishes the arterial tension, prevents the exhaustion of the respiratory centre by the continued dyspnœa, and cuts short the asthmatic attack, while the latter stimulates the ventricle to greater activity. Calomel may also be employed for its diuretic and purgative action, thus depleting the system; and though somewhat uncertain, it always benefits that patient to whom it has formerly done good. Strophanthus has been of no value in dyspnœa in the author's experience, except in those cases in which it produces free

diuresis. As regards uræmic and dyspeptic asthma: the former is simply cardiac, and has nothing directly to do with uræmia. Cases of the latter have been reported by Henoch, and seem to depend on the presence of undigested masses in the stomach; the affection being relieved by vomiting after lasting one or two days. (American Journal of Med. Science, Oct., p. 410.)

CARDIAC DILATATION.—Its Management.

At the Medical Society of the State of New York, Feb., 1889, Dr. A. L. Loomis read a paper on this subject. Twenty years ago cardiac murmurs were given great prominence. They were now considered of significance only in connection with the morbid changes which gave rise to them. To prevent dilatation by maintaining compensatory hypertrophy certain conditions must be met: first, the muscular tissue of the heart must be healthy; second, the heart muscle must receive a sufficient supply of good arterial blood; third, muscular waste must be rapidly removed from the body; fourth, the trophic nerves of the heart must be in a normal state. In studying the ætiology of dilatation, the causes were divided into primary and secondary. Under the primary were impaired nutrition and extreme anæmia, degenerative changes in the heart muscle, excessive use of narcotics and venery, insufficiency of aortic and mitral orifices with obstruction to the circulation, atheromatous changes in the coronary artery, arterial sclerosis, and renal disease. Secondary cardiac dilatation, or that following hypertrophy, gave a less favourable prognosis. As a general rule, digitalis was indicated when there was commencing or advanced loss of compensation. If the failure in compensation was extreme and accompanied by dilatation, more or less venous stasis occurred. The essential therapeutic action of digitalis was to raise arterial pressure. If the urinary secretion was increased by the drug, its administration was safe; otherwise its use should cease. The indications for the use of strophanthus, convallaria, strychnine, arsenic, iron, and hygienic management also received attention. (N.Y. Med. Journal, Feb. 16, p. 187.)

EPISTAXIS.—Oil of Turpentine as a Styptic in.

Ernyei (*Pest. Med. Chir. Press.*) recommends plugging the nose with tampons saturated with oil of turpentine. He employed this procedure with immediate success in three cases which had resisted all the usual remedies. The only drawback of this treatment consists in the turpentine strongly irritating the nasal mucous membrane. (Medical Chronicle, Nov., p. 152.)

HEART DISEASE.—The Therapeutic Treatment of.

The condition of the arteries and veins and of the capillary system furnishes an indication for treatment which is apt to be overlooked. Attention is paid to the veins and to their turgescence in instances

of dilated right heart and cardiac dropsy. But there is the equally important state of the arteries, of the arterioles and capillaries, and the appearance of the skin and the network of fine vessels in it, by which we can judge of the more minute circulation. Now, we must remember that the very remedy we use most in cardiac disease, digitalis, contracts the arteries and arterioles, and the indications are often to get with increased cardiac power a free flow in the vessels without resistance from them. No remedy does this; and a certain remedy of the kind is greatly needed. It is claimed that strophanthus has this valuable property, that it is a cardiac tonic which does not also contract the bloodvessels; but this is not proved—indeed, recent researches, such as those of Bahadhurji, suggest the contrary. Still, the evidence is in favour of strophanthus contracting the vessels to a much less degree than digitalis. Nitroglycerine and the nitrites produce rapid and great dilatation of the vessels, but have, I think, very little effect on the muscular power of the heart. Belladonna and atropia in decided doses have somewhat the same action as nitroglycerine, less on the vessels, rather more on the heart. Why can we not learn to combine nitroglycerine or atropia with digitalis in right proportions, and obtain, where we so wish it, full cardiac power without resisting vessels? (Dr. Da Costa, American Journal of Med. Science, Nov., p. 444.)

Heart Disease.—The Use of Chloride of Barium in.

A remedy which I am using now a great deal is chloride of barium. Since I became acquainted, through the investigations of Boehm and of Bartholow, with its physiological action and learned that in this it resembles digitalis, I have prescribed it repeatedly in valvular affections. I find it both a general tonic and a cardiac tonic, a remedy that increases the tone in the bloodvessels, a fairly good diuretic, and one that can be taken for a long time without disordering the stomach. It may be even, as Kobert shows, administered hypodermically. The dose in which I have given it by the mouth is one-tenth of a grain in pill, three or four times daily; a rather larger dose is, however, admissible. In very decided amounts it is apt to produce diarrhœa. As Bartholow points out, it has many incompatibles, and it is best not to give it in combination. Among its properties I have noted that it lessens cardiac pain. I learned this from the case of an elderly gentleman with a mitral lesion, regurgitation with some narrowing and defective compensation, in whose case pain or constant cardiac uneasiness was a prominent feature. Digitalis did him in this respect no good and was losing its effect in steadying the irregular heart. Chloride of barium in one-tenth of a grain doses improved him greatly; the oppression was relieved, the heart became more regular, the cardiac distress disappeared. He has been more than once benefited for a long time by a three weeks' course of the remedy. (Dr. Da Costa, American Journal of Medical Science, Nov., p. 451.)

Heart Disease.—State of the Urine in.

One of the most important of the secondary results of the cardiac malady is the diminution of the quantity of the urine. Not nearly enough attention is paid to this point, and, unless the urine be albuminous, it is not thought to be of any service to take its state particularly into account; yet it is very valuable to do so. Scanty urine, often of higher specific gravity than normal and full of urates, will go hand in hand with cardiac pains, with headache, and with dyspnœa. It is well known that the shortness of breath in valvular disease does not always receive an adequate explanation in the physical condition of the lungs. The explanation may be partly found in the concentrated condition of the urine, and, very likely, in some of its retained elements producing the disturbance in the capillaries of the lung or the respiratory centre. At all events, from a practical point of view, we observe that diuretics, in the condition alluded to, are most valuable in relieving the pulmonary distress and the other symptoms. Of great service is caffeine, than which, indeed, there is no better diuretic in cardiac cases, especially those with weak heart and concentrated urine, and which, also, up to a certain point has the properties of digitalis as a cardiac tonic. The dose generally sufficient is two grains of the citrate given every third hour; but it may be given in five grain doses or more. (Dr. Da Costa, American Journal of Medical Science, Nov., p. 449.)

Heart Disease.—Gastro-Enteritis as a Cause of Death in.

At the Clinical Society, on Dec. 14th, Dr. Thomas Oliver, of Newcastle-upon-Tyne, read a paper on a cause of Speedy Death in Heart Disease, in which he drew attention to gastro-enteritis as a not infrequent cause of the rapidly fatal termination of cardiac disease. He gave a brief record of three cases out of seven or eight which had come under his notice within the last few years. The patients were all upwards of thirty years of age, were all men, and in none of them, either from the previous history or during the course of the illness, could anything be found likely to lead one to suspect that death would be induced by the setting up of a rapidly fatal form of gastro-enteritis. In all, the symptoms were of an acute character; they were frequently very quickly developed, and death preceded by collapse occurred either in a few hours or within a few days. The first symptoms complained of were pains over the region of the stomach and vomiting. Although aortic and mitral regurgitation were the forms of cardiac disease present in all of his cases, Dr. Oliver was not inclined to exempt other forms of heart disease from the tendency to end thus. Convallaria had been the drug taken during life by most of the patients, but several considerations made it clear that the drugs were not responsible for the gastritis. The writer thought that heart disease and gastro-enteritis stood in some obscure causal relationship to each other. (Lancet, Dec. 22, p.1235).

NÆVUS.—The Employment of Electrolysis in.

I find that I habitually work with a current of between 40 and 80 milliampères; but that is really a matter of small importance. A galvanometer is of no value in operations where the duration is determined by the palpable and visible effect produced. It is very different in cases where you cannot see and feel the gradually increasing swelling, tension, and hardness. There a means of measuring the current in operation is essential. Four to eight cells of large size and good electro-motor force are most convenient to work with. It is not necessary to use a large number of cells if both poles be introduced as they ought to be. The body is as good a conductor as acidulated water if the resistance of the skin be avoided. I introduce both electrodes (insulated, of course, so that the operation may be truly subcutaneous), but I work chiefly with the negative pole. It is to be remembered that the effect is produced mainly by shrivelling up and destroying the vascular walls, and that coagulation of the blood is a matter of very secondary importance; therefore, I keep moving the negative pole about and penetrating as many vessels with it as I can, because its destructive effect is more powerful and diffuse than that of the positive. I maintain it in one place just long enough to bring about a decided effect, and then change to another. In these operations the process is essentially distinct from that by which Apostoli and others have produced their effects upon uterine tumours. However his results may be brought about, it is not by electrolysis proper, it is not by the decomposition of fluids and solids at the poles of the battery. It may be neurotic or vascular or trophic or osmotic, it is not electrolytic, and to call it so is no doubt a misnomer. (Mr. John Duncan, Edinburgh, p. 292.)

Nævus.—Method of Using Electrolysis in.

I always use the positive pole with one or more needles, according to the size of the growth and its situation. The needle (or needles, as the case may be) is moved about systematically to attack the growth in various parts. This is done without withdrawing the needle after it has remained long enough in one spot to produce some effect. It is wiser at first to work well away from the surface of the tumour, especially in raised nævi which are very florid, to avoid risk of destroying the thin covering. The circuit is completed by attaching a rheophore to the negative pole; by this we avoid an unnecessary puncture, and I find that the process is equally effectual. I have not yet succeeded in finding a good means for insulating needles, and the scar left by the negative needles is brown and very disfiguring. I prefer to use the positive instead of the negative pole, because it is slower in its action and therefore less likely to lead to sloughing, and the bleeding on withdrawal of the needle is much less troublesome. The objection to the scar left by the negative needle has already been referred to. The number of cells

used, I find in my notes, varies somewhat, but my usual custom is to commence with five Leclanché cells (Silvertown Battery Company), and increase according to the effect produced. Ten cells are generally sufficient, but in deep subcutaneous nævi I have applied twenty cells. The amount of tension caused must be carefully gauged, cutaneous nævi being capable of standing very little. Change in colour to a dusky hue is a good guide to judge when it is requisite to stop the current. I arrived at the conclusions detailed here by testing the number of cells and their effect on nævi on the trunk where scarring was of less importance. On withdrawal of the needle, all that is required is to rotate it before pulling to free it, and then paint the orifice with collodion. (Dr. Lewis Marshall, p. 287.)

PERICARDITIS.—The Diagnosis of.

M. Puis of Vienna (cited in *La France Médicale*, No. 27) has drawn attention to the presence in pericarditis (with effusion ?) of a limited strip of dulness posteriorly extending from two fingers' breadth above the angle of the scapula to two fingers' breadth below the inferior border of the lung, and limited by the spinal column on the right. Bronchial breathing, bronchophony, and increased vocal vibration occur over this area. But when the patient is in the prone or knee-elbow position, the dulness is replaced by a tympanitic note, the bronchial breathing disappears, and friction becomes audible. (Lancet, March 16, p. 549.)

Purulent Pericarditis.—Aspiration and Drainage in.

At the Clinical Society, on Nov. 23rd, 1888, Dr. Dickinson read the following case: "A boy aged ten was brought to St. George's Hospital, having had symptoms which Dr. Harris and Mr. Noad, both of Norwood, interpreted as pyæmic. A large gluteal abscess was followed by signs of pleural effusion and œdema of the face and chest. On admission, on June 15th, 1887, there was evidence of effusion in the left pleura and in the pericardium. The position of the heart was almost undiscoverable amid the dulness, which involved the left pleural and præcordial regions. There was much dyspnœa, blueness, and irregularity of pulse. There was œdema more or less general, but especially marked about the thorax. The liver was enlarged or depressed so as to reach the umbilicus. On the 18th the pleura was aspirated, and thirty-seven ounces of serum drawn off, which operation was repeated on the 23rd, with the removal of thirty-two ounces. The dyspnœa, blueness, and œdema were but slightly and temporarily relieved by each operation, which had to be repeated on the 25th and 28th, so great was the distress and so rapid the reaccumulation. On the 30th, the futility of dealing with the pleura having become apparent, the pericardium was aspirated by Mr. Rouse, and one ounce of creamy pus withdrawn; the aspiration was repeated with more success on the 8th of July, and twelve ounces

of similar fluid withdrawn, and also on the 15th, with the withdrawal of nineteen ounces. The place selected for puncture was on the right side close to the edge of the sternum, in the fifth interspace. The heart before each of these operations had been drawn to the left by a preceding evacuation of the pleura. The lower part of the pericardium, where the swing of the heart was greatest, and the right extremity of the cavity, from which the heart was farthest removed, was obviously the part which could be penetrated with the greatest safety. By July 22nd the pericardium was again as full as ever, and the general symptoms distressing. It was clearly necessary to replace aspiration by a tapping opening. Mr. Rouse accordingly made an incision where the punctures had been, and put in a tube. The aspiration was followed by some faintness and subsequently by great relief. Not to follow the case in further detail, recovery, after some temporary drawbacks and three subsequent aspirations of the pleura, became complete. By the middle of September there was no remnant of the pericardial puncture except a small cicatrix, which moved with each beat of the heart. In the course of less than two months the chest had been punctured sixteen times; the pleura twelve times with the aspirator, and removal of serous fluid; the pericardium four times, three times with the aspirator, and once so as to leave an opening and a constant discharge of pus. The nearly total absence of friction, which was recognised but on one occasion, was remarkable. (Lancet, Dec. 1, p. 1068.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

ACUTE CORYZA.—Inhalation of Warm Camphor Vapour in. The *Schweizer Wochens. für Pharm.* gives the following simple treatment for this affection: Put one teaspoonful of powdered camphor in a cone-shaped vessel, filled with boiling water, and covered with a cornucopia, the top of which is then torn off just enough to admit the nose, and the warm camphor-vapour inhaled from ten to fifteen minutes. A repetition of this procedure after four or five hours, will generally suffice to effect a cure. (Medical News, Feb. 2, p. 126.)

ACUTE TONSILLITIS.—Its Relation to Acute Rheumatism. It cannot be doubted that in a certain percentage of cases there is some connection between the two diseases. I have confined my inquiries to cases with an undoubted history of acute rheumatism, for I think one is able to obtain more reliable information under this head than in the chronic type. And I find that about 10 per cent. had a clear history of rheumatic fever, and those in whom I could trace in one of the parents a decided history of this fever, amounted to about 5 per cent. In addition to these there is a fair

percentage of cases in whom the rheumatic diathesis is unmistakably present, so that the connection between the two diseases is greater than is generally supposed. From a clinical point of view, we know that acute tonsillitis, from whatever cause, may run the same course; but, from careful observation of the disease in subjects with a rheumatic diathesis, it appears to me that the distinguishing features of this form are—(1) The induration is more marked in the peritonsillar connective tissue. (2) That the inflammation is less prone to suppurate; and, if suppuration takes place, spontaneous discharge of the pus is certainly delayed. (3) That subacute attacks with a moderate-sized gland are more frequently than not of rheumatic origin, particularly when the sanitary surroundings are good. (4) That in the rheumatic type the induration and thickening of the adjoining tissues are more marked. (Dr. Christopher Lewis, Assistant Surgeon to the Ear and Throat Hospital, Birmingham, British Med. Journal, Sept. 15, 1888, p. 614.)

Acute Tonsillitis.—Its Treatment by Incision.

I have for so long experienced the excellent effects of an early incision into the inflamed tissue that I am strongly of opinion that this mode of treatment needs more consideration. I do not wait until pus is formed, but when the induration and swelling become marked and the patient complains of the tearing dragging pain which indicates extreme tension of the tissues, then an incision should be made without delay. I maintain that a free incision, applied at a proper time, gives considerable, and frequently instantaneous, relief, for if pus has formed it encourages its flow, and if not, I believe that resolution of the inflammatory material is thereby hastened. I can speak from personal experience, as one who has suffered from tonsillitis, of the comfort thus afforded, and only those who have suffered can form an adequate idea of how days of torture are spared by this treatment, as compared with the weary waiting and watching for Nature to do its work. By an application of cocaine the incision is painless, and the after-treatment of steam with tincture of benzoine relieves the soreness of the wound. Cocaine, in the form of spray or pastille, affords temporary relief in tonsillitis, but this sometimes occasions uncomfortable paresis of the pharynx and palate, which, in a few instances, was so objectionable to the patient as to compel its disuse. On the other hand, in other cases, while the act of swallowing previous to its use has been almost unbearable, immediately afterwards fluid food could be taken with tolerable ease. Again, some patients are exceedingly susceptible to the toxic effects of this drug; so, in all cases, its administration should be watched. Of drugs for internal use, salicylate of soda is the only one upon which I think any reliance can be placed in acute attacks, for it generally gives relief even in those cases where there is no history of rheumatism. When the sub-acute stage has arrived I

have found that the old-fashioned mixture of iron and chlorate of potash is of good service. Guaiacum is so uncertain in its action that I rarely prescribe it. Gargles I have abandoned for some time, for they worry the patient without affording any relief. (Dr. Christopher Lewis, British Medical Journal, Sept. 15, p. 613.)

ADENOID DISEASE OF THE NASO-PHARYNX.—Treatment.

The treatment of adenoid vegetations of the naso-pharynx is a large subject, on account of the immense literature to which it has given rise. I think the great majority of operators are in favour of removing these growths either with the unarmed finger nail, or with curved forceps introduced behind the soft palate. When they are removed without chloroform, I prefer to do so with the finger nail; this usually takes four sittings, though much may be accomplished even at one sitting. This method has the great advantages of simplicity and absence of risk. Its great drawback is that, with timid children, it is difficult to get them to submit to the successive scrapings, and that parents, especially in the upper classes, seeing that their children are frightened, are apt to stay away with them before a satisfactory result has been obtained. This drawback is completely avoided by removing the growths at a single sitting under chloroform or ether. Guiding the instrument by means of my left fore-finger in the naso-pharynx, I remove the largest of the vegetations with Catti's forceps. Afterwards I scrape away the remaining vegetations with my finger nail, examining each wall carefully. Blood running down the pharynx is removed by frequent mopping with small sponges on sticks. Some surgeons operate with forceps without inserting the finger simultaneously, but I think Meyer's is a very good rule to hold by, namely, that no instrumental removal of these growths should be attempted unless the instrument is guided either by sight or touch. Why, it may be asked, should we operate blindly in this cavity when we are able to operate accurately by means of one of the senses mentioned? I have operated on a certain number of cases in this manner since 1881, and have not found any bad results. I have done it with the head hanging down, with the patient recumbent, and with him in a semi-recumbent position in a chair or sofa (and perhaps on the whole the latter is the best position). My own idea is that the practitioner should be guided in his choice between the above two methods (that is, with the use of an anæsthetic and without) by the character of the patient and by the severity of the case. Galvano-cauterisation of vegetations with Voltorini's gouge is sometimes useful, but if they are at all large it is, according to my experience, a mere tinkering at growths which can be otherwise much more easily got rid of. They may also be removed with the cold snare through the anterior nares. (Mr. Cresswell Baber, p. 305; and British Med. Journal, Sept. 15, p. 602.)

COMMON CATARRHAL HEADACHE, due to Inflammation of the Frontal Sinus.—Treatment.

The treatment of hyperæmia of the brow sinus occurring in the course of an ordinary acute coryza is, fortunately for the patient, very satisfactory. The first indication is to reduce intra-nasal congestion, and thus relieve stenosis of the infundibulum. In the muriate of cocaine we have an agent perfectly suited to meet this indication: a small pledget of cotton soaked with not above ten drops of a 5 per cent. solution, is to be tucked up over the anterior portion of the lower turbinated body by means of a very delicate ear forceps (of course, under perfect inspection), and allowed to remain for about five minutes. The result is nearly always immediate, and frequently permanent, relief from the tissue contraction; the pledget being removed, the intra-nasal region should be gently sprayed clean with some mildly stimulating, but entirely unirritating, antiseptic formulæ; the following is a favourite with writer:

℞. Listerine (Lambert), f ℥ iv; acid. boric., gr. xx; aq. rosæ, aq. dest., āā f ℥ij. M. S. Use in atomizer.

The Schneiderian membrane being carefully cleared of all adherent mucus and dislodged epithelial elements, a powder somewhat like the following should be insufflated into the region of the infundibulum:—

℞. Morphinæ sulph., gr. vj; atropinæ sulph., gr. j; bismuth. subcarb., ℥ ijss; acaciæ pulv., ℥ jss. M.

This formula must be carefully *bolted* into an impalpable powder. From two to four grains are to be used at each insufflation in the case of adults, much less when used in the case of children; four grains representing a full therapeutic dose of atropine. In mild cases frequently no further treatment will be called for, or if somewhat severe in character, one or more daily repetitions will cure the case. Attention to the condition of the digestive tract is, of course, always called for, and a mild cathartic may be given. The bromides of potassium and sodium given in large doses, three to four drachms in the first twenty-four hours, and two drachms per diem subsequently, have often had an admirable effect on this condition in my hands. (Dr. R. W. Seiss, Prof. in Philadelphia Polyclinic, Medical News, Jan. 5, p. 10.)

CROUP AND DIPHTHERIA.

In regard to the question: Does membranous croup occur apart from diphtheria? Dr. Ranke referred to his former publications on this point, and wished merely to repeat that, in all cases of membranous croup he could examine closely, he found invariably that they were somehow or other connected with a case of diphtheria of the fauces, occurring in the neighbourhood either before or after. He, therefore, believed that all cases of membranous croup were caused by the diphtheritic virus. (Dr. Ranke, Munich, British Medical Journal, Sept. 22, p. 657.)

DIPHTHERIA.—Loss of the Knee-Jerk in.

It is, of course, a matter of common knowledge that in the paralysis following diphtheria the knee-jerk is usually feeble or absent. It is, however, not so well known that, even when the membrane is present in the fauces, the knee-jerk occasionally disappears. In a certain proportion of cases, on the other hand, it is exaggerated; but whether this is succeeded by abolition of the phenomenon, as is sometimes the case in diphtheritic paralysis, is a point on which I cannot positively pronounce. The absence of the knee-jerk in diphtheria is, no doubt, due to the same nervous derangement (whatever that may be) which causes actual paralysis in the later periods. Paralytic affections of the soft palate in the acute stage, though often slight and transitory, are, I believe, of greater frequency than is usually supposed. Sudden death from cardiac failure is in all likelihood dependent on some paralytic condition affecting the nervous apparatus of the heart. The opinion which I am inclined to entertain is that the nervous system not uncommonly undergoes morbid change, though they may be few objective signs during the first few days of the disease. Post-diphtheritic disorder of the nervous system may be indicated solely by the absence of the knee-jerk, and this may persist for many months. (Dr. W. B. Hadden, Assistant Physician to St. Thomas's Hospital, Lancet, Jan. 5, p. 12.)

Diphtheria.—Local Measures of Treatment.

Strong Caustics: (Alteratives).—Bretonneau appears to have attached the greatest importance to prompt and vigorous local treatment. He used hydrochloric acid, diluted with three or four parts of water. I have used the acid diluted with three or four parts of glycerine, and have found it a most effectual application. From personal experience I can assert that it only attacks the diseased parts, or that it attacks these chiefly. When mucous membrane is inflamed or irritated it becomes covered with tenacious mucus, which protects it. The diseased and ulcerated portions not being so protected, the acid glycerine gets at them, and acts as a powerful caustic and alterative. I do not hesitate to swab out the pharynx and posterior nares very freely with this mixture once, twice, or oftener if necessary. Glycerine of carbolic acid may be used in the same way and for the same purpose. Such strong applications, however, must not be made too often. Two or three applications usually suffice in as many days. Great care must be exercised not to abrade the diseased parts or to tear away the false membrane; in fact, the greatest gentleness must be used in making the applications. But, besides these local caustics, I strongly believe in the use of weaker astringent applications, frequently applied. The former applications are intended to destroy the specific nature of the lesion, to set up a simple inflammation in place of the specific one, while the weaker solutions are to be applied frequently

for the purpose of diluting, disinfecting, and washing away all local inflammatory products.

Sprays.—The application of such washes as these may be very easily and effectually applied by means of a spray producer. The finer the spray the more effectually can it be applied, and for this reason a steam spray producer is better than one worked by the hand. By making the patient inhale through the nose, local applications can be very effectually applied to the tortuous passages of this region. Various solutions can in this way also be made to reach even the lungs. Sprays are equally useful and applicable whether tracheotomy has been performed or not.

Irrigation.—This is an admirable method of washing away the products of the local lesion. In cases of severe nasal diphtheria I would even counsel the administration of chloroform if needs be, in order to secure a thorough cleansing of the posterior nares and adjoining pharynx. If an anæsthetic be given, and in the case of children, neutral solutions must always be used—either plain water (which has been boiled) or a solution of boric acid. For adults almost any kind of solution can be safely used ; for, by holding the head forward and keeping the mouth open, the irrigated fluid will all pass out again, and none is swallowed. I have used solutions of sulphate of copper (gr. ij to ℥i). of corrosive sublimate (1 to 1,000), of quinine (gr. 5 to ℥i), without any drawbacks, according to the supposed needs of the case. A suitable tube is passed into the nostril, first to the right and then the left, and a pint or more of the fluid irrigated through each. In this way patches of membrane, in spissated muco-pus, etc., can be washed away without difficulty or pain. Such irrigation is far more effectual and far less disagreeable to the patient than injections with a syringe. I believe we are indebted to Dr. Jacobi for this valuable suggestion.

Powders for Dusting.—After irrigation, or in place of it, the application of antiseptic substances in the form of fine powder is a most useful proceeding. Thus iodoform, boric acid, may either be snuffed in or blown into the nostrils and on to the pharynx with a suitable dusting-machine. (Mr. R. W. Parker, p. 292 ; and British Med. Journal, Sept. 22, p. 654.)

Diphtheria.—The Employment of Mercury in.

My acquaintance with mercury in this connection is not at all new. More than four years ago I published a number of cases which got well under its use ; at the same time that Dr. Thallon, of Brooklyn, published an article on the same subject. Since I have employed it, I prefer the bichloride, my conviction of the utter uselessness of internal medication in laryngeal diphtheria, so-called pseudo-membranous croup, is thoroughly shaken. Until about six years ago I felt certain of a mortality of 90 or 95 per cent. of all the cases not operated upon. These figures were not taken from small numbers, for I compared those I found with my own. The latter are not a

few neither; for within the last thirty years I have tracheotomised nearly 600 times, have assisted at as many more operations, and have seen at least 1,000 cases of laryngeal diphtheria which were not operated upon at all. During the last six years I have seen no less than 200 cases, perhaps many more. Amongst them recoveries have not been rare, and this at all ages, from four months upward. The uniform internal medication consisted in the administration of a dose of the bichloride every hour. The smallest daily dose ever given by me in the beginning was 15 milligrammes, $\frac{1}{4}$ grain, to a baby of four months; this was continued a few days, and the dose then somewhat diminished. Half a grain daily may be given to children of from three to five years, for four or eight days or longer. The doses vary from one-sixtieth to one-thirtieth. They require a dilution of 1 in 6,000 to 10,000 of water or milk. There is no stomatitis, gastric or intestinal irritation is very rare. It occurred in a few cases, but then it was found that the dilution had not been sufficient, 1 in 2,000 or 3,000 only. If ever it exist, small doses of opium will remedy it. The benefit to be derived from the remedy depends greatly upon the time of its administration. Tracheotomy or intubation is required as a rule, after days only, and can often be avoided if mercury be given in time. If the operation become necessary after all, the treatment must be continued diligently. Never have I seen so many cases of tracheotomy getting well, since 1863, as when the bichloride was being used constantly in 1882, and the five subsequent years. Nor am I alone with these favourable results. There are dozens of practitioners in New York city with whose methods and results I am well acquainted, some of whom are connected with me, in some capacity or other, who confirm the above statements. My experience with the bichloride is mainly gathered in cases of laryngeal and bronchial diphtheria, so-called pseudo-membranous croup and fibrinous bronchitis; it is there where it has been particularly effective. Still, but few of these were quite localised affections. Our cases of diphtheritic laryngitis are mostly descending, and complicated with either diphtheritic pharyngitis, rhinitis, or both. Not a few, mainly of the latter kind, exhibit constitutional symptoms of sepsis; many such have also got well. (Dr. Abraham Jacobi, Pres. New York Acad. of Med., British Med. Journal, Sept. 22, p. 653.)

Diphtheria.—Treatment by Gallic Acid and Glycerine.

Hoyer (*Memorabilien*, 1888) defines his views on the nature of diphtheria and describes his method of treating it. Considering it to be a disease produced by a micro-organism invading a tonsil whose epithelium is lost, he devotes his attention to the prevention of this invasion, or to the destruction of the bacteria which have already attacked the tonsil. For this purpose he paints the tonsils with a solution of thirty parts of gallic acid, sixty parts of distilled water, and ten parts of glycerine. A brush of fine bristles is employed and

considerable pressure exercised against the diphtheritic membrane. He carries out this procedure three times in succession, repeats it every six or eight hours, and continues the treatment until the diphtheritic membrane has disappeared. He prescribes also a gargle of one part of chlorine water and three parts of distilled water to be used several times between the applications to the throat. The same mixture is to be injected into the nose in cases of malignant diphtheria. Persons who are in attendance upon patients with the disease should also use a gargle of the same nature. The author declares that he cannot say sufficient in praise of gallic acid for the purpose indicated. It renders the putrefactive bacteria innocuous, hinders their growth and increase, by its astringent action on the tonsils protects against their absorption, and by the same action loosens the deposition upon them. It is also entirely uninjurious to the patients. (American Journal, Jan., p. 67.)

Diphtheria.—Its Treatment by Menthol.

Cholewa (*Thérap. Monatshefte*) reports most favourable results from the application of plugs of cotton wet with a 20 per cent. oily solution of menthol to the nose in cases of nasal diphtheria. In cases in which syringing of the nose had been impossible on account of its being entirely filled with membrane, this method seemed rapidly to remove the membrane and to bring the diphtheritic process to a standstill. (American Journal, Oct,, p. 406.)

DISEASES OF THE LUNGS.—Salicylate of Soda and Caffeine.

The well-known stimulating action of caffeine on the cardiac and respiratory centres has led Ye Gempt (*Berlin Klin. Wochens.*) to employ it largely in diseases of the lungs. The double salt (sodio-salicylate of caffeine) is to be preferred on account of its greater solubility and the rapidity with which it is absorbed. 3 grains of the salt per day is seldom sufficient, while over $7\frac{1}{2}$ grains per day is not needed. The number of cases treated was forty. After discussing the subject fully and reporting some of the cases in detail, the author draws the following conclusions: (1) The use of the double salt of caffeine is indicated in the course of acute fibrinous pneumonia whenever observations on the activity of the heart and the pulse show a diminution in the strength of the heart, a fall of the arterial pressure or an abnormal frequency or an irregularity of the pulse; the continuance or increase of which symptoms becomes threatening to life. (2) The drug is to be made use of, when possible, before actual evidences of collapse appear; and if these are suddenly developed, the indication is so much the more urgent and the effect is still often good. (3) In conditions of weakness, valvular lesions, atrophy of the heart, likewise in drunkards and in old persons, its employment should be commenced in the beginning of the disease. (4) The action of proper doses consists in diminution of frequency of pulse and res-

piration, increase of arterial pressure, lowering of temperature and favourable action on the subjective sensations of the patient. The use of stimulants is not excluded by the administration of caffeine. They are to be given under the known indications for them. (5) The action of the drug soon commences, but in threatening cases can be made still quicker and surer by means of subcutaneous injection of the remedy. After the fall of temperature, caffeine is only to be given for a short time. (6) The same indications for the use of caffeine hold good in atelectatic or hypostatic conditions of the lungs. (7) The employment of the double salts of caffeine in emphysema or asthmatic conditions is indicated by the same signs as those for the use of the drug in diseases of the heart. (American Journal, Oct., p. 408.)

ENLARGED TONSILS.—Use of Galvano-cautery in.

The employment of the galvano-cautery as a means of reducing enlarged tonsils has, of late years, gained much favour amongst the profession. Quite a number of surgeons prefer it to the cutting operation, on account of dread of hemorrhage, but in a certain class of cases it is, so to say, the only means to the desired result, leaving out of consideration caustics, like chromic acid, Vienna or London paste, &c. In inflammatory processes of the tonsils the diseased organ often forms adhesions with the anterior pillar of the fauces, which then covers the tonsil, either hiding it entirely from view, or letting only so small a part protrude beyond it that it is impossible to grasp it with any cutting instrument without injuring the pillar. Here the use of the galvano-cautery is in place, and very few sittings (from five to ten) are sufficient to bring on the necessary reduction in tonsils of large size. The platinum point is immersed either into a crypt, or into the mass of the tonsil itself, and several days have to elapse before the reaction has subsided, the slough comes off, and a second application can be made. The instruments required are either a fine cautery-knife, or a pointed platinum electrode, and any good cautery battery. (Dr. J. W. Gleitsmann, Prof. in New York Polyclinic, Medical News, Jan. 19, p. 65.)

Enlarged Tonsils.—Treatment by Ignipuncture.

Dr. Wilhelm Roth, of Fluntern, finds that in order to reduce the size of the tonsils without risk of troublesome hemorrhage, which is not uncommon, especially in young subjects, the best plan is to employ ignipuncture, as has been recommended by Krishaber, and more recently by Verneuil. The tonsils and neighbouring parts are first brushed over with a 10 to 20 per cent. solution of cocaine. The finest point of the thermo-cautery, heated to redness, is then inserted to a depth of about five millimetres in three or four spots a few millimetres apart from one another on the tonsils. The instrument is not allowed to remain more than one or two seconds in the tissue. The whole operation, including both tonsils, can be per-

formed in a very few minutes without any bleeding, and with scarcely any pain. It must be repeated four or five times at intervals of two or three days, and this is usually sufficient to cause the tonsils to return to their ordinary condition. (Lancet, Feb. 16, p. 345.)

EPIGLOTTIS.—A New Way of Raising the Epiglottis for the Prevention of Asphyxia.

At the Medical Society, on Oct. 22nd, Dr. Benjamin Howard read a paper on a "New and Only Way of Raising the Epiglottis," of which the following is an abstract:—The epiglottis, as regards its functions, from the time of Plato to that of Magendie was conspicuous as a subject of dispute. Respecting the epiglottis as a factor in the apnœa, on the contrary, that which was taught at the first has been taught ever since, and is to-day everywhere the rule of universal practice. This teaching is—(1) that in apnœa the epiglottis falls backwards and closes the glottis; (2) that the elevation of the epiglottis is the first thing in order and in importance, as without this respiration, whether natural or artificial, is impracticable and the result fatal; (3) the only way by which the epiglottis can be elevated is by means of the tongue; as the tongue is brought forwards the epiglottis is moved upwards. As a summary of results of prolonged and repeated investigations and experiments the author proposed to show:—1. The effect of traction of the tongue, what is done by it, and what is not done by it. 2. A new and only way of raising the epiglottis. 3. Some important changes in the relations of certain parts of the upper air passages to each other, induced by complete extension of the head and neck. By the aid of a series of diagrams made by the author from sketches he had made from nature he then showed: (1) Contrary to general belief, traction of the tongue, however and whatever the force employed, does not, and cannot, raise the epiglottis as supposed. Because (*a*) the tractile force supposed to be exercised upon the epiglottis is arrested chiefly by the frænum linguæ, and through the muscular fibres within is expended upon the inferior maxilla, into the genial tubercles of which they are inserted; (*b*) the surviving force is expended almost entirely upon, and intercepted by, the anterior pillars of the fauces; (*c*) for any tractile force which might survive a continuous and sufficient medium for its transmission to the epiglottis is wanting. Proof: The glosso-epiglottidean fossa being filled with water, the subject being so placed that the floor of that fossa is formed in part by the fallen epiglottis itself, traction upon the tongue, however forcible, does not cause the water to be spilled. As the author had just been publishing an improved way of seizing the tongue for the above purpose, this discovery was a great disappointment, and a great dilemma, as no other way of raising the epiglottis seemed to have ever been contemplated. After a search by no means easy or short, he discovered (2) the only way by which the epiglottis can be certainly raised, which is by extension of the

head and neck. By this means its elevation is instant and complete; because (*a*) by a three-linked chain of which the hyo-epiglottic ligament is the lower link, the body of the hyoid bone the central link, the combined genio-hyoidei and mylo-hyoidei muscles the upper link, the epiglottis is so coupled to the inferior maxilla, just where it has its greatest range of motion, that above a certain point, as the lower jaw is moved upwards, the epiglottis instantly, irresistibly, and inevitably moves upwards exactly in unison till it is erect. The customary wrenching asunder the clenched teeth, in proportion as it depresses the body of the lower jaw, antagonises a distinct effort of nature to maintain the elevation of the epiglottis, and specially favours, sometimes helps, sometimes greatly increases, its depression. The author indicated on his diagrams the way in which other anatomical causes of obstruction in addition to the epiglottis respectively bar the air way, for all of which he submitted a positive and complete remedy, and showed (3) the way in which by extension of the head and neck, carried to the utmost completeness, the backward fallen tongue, the velum palati, and uvula are all simultaneously shifted from the air way, and the entire pharynx is enlarged throughout, as follows: (*a*) The tongue, the dorsum of which before fell by gravitation upon the then horizontal posterior wall of the pharynx, falls upon the now horizontal arch of the palate. (*b*) The velum palati, by means of the great tension of the palato-pharyngei muscles, is pulled away from the posterior wall of the pharynx, the entire membrane being stretched tightly forwards and downwards behind part of the dorsum of the tongue, forming a partition which helps to shut the tongue out of the pharynx, and into the mouth, where it belongs, and with part of the dorsum forms the anterior wall of a new post-oral air way, thus created and maintained. (*c*) The pharynx, anteriorly, is stretched far forwards by the extremely tense sterno-thyroidei muscles acting through the thyroid cartilage. By the genio-hyoidei and mylo-hyoidei muscles acting through the os hyoidei, the base of the tongue and the velum palati are shifted forwards in the manner already described, the posterior nares being shifted by the extension of the head by its occipito-vertebral articulation about sixty degrees. Posteriorly, the wall of the pharynx is shifted back its whole length by the extension of the cervical vertebræ upon each other, in all about thirty degrees, the extension being particularly great just opposite the glottis. Thus, the upper air way, which before was a tortuous, angular, flaccid canal—barely, and if at all uncertainly, permeable—is made an enlarged, firm, but slightly curved tube, free throughout, from the glottis to the nares. The way to make complete extension of the head and neck: Having, by bringing the patient to the edge of the table, or bed, or by elevation of the chest, provided that the head may swing quite free, with one hand under the chin and the other on the vertex, steadily but

firmly carry the head backwards and downwards; the neck will share the motion, which must be continued until the utmost possible extension of both head and neck are obtained. Sometimes a slight elevation and extension of the chin merely will at once check stertor, or irregularity of breathing, but, understand, the extension, which can in no case do harm, should be always rather more than appears necessary. It should never be forgotten, however, that the full effects of extension, as above described, can be secured with certainty, only by making the extension complete as directed. That the customary pulling forwards of the tongue is followed by relief the author admits to be true in some cases, but in some cases only, and then it is not by the raising of the epiglottis. In the stage and in the case in which the backward fallen tongue happens to be the chief cause of obstruction, by pulling forwards the tongue that cause of obstruction is removed, nothing more; but there are other cases, other stages, in which it does no good at all. From over 13,000 fatal cases of asphyxia in England alone during the last three years, the author selected over 100 unequivocally attributed to the administration of anæsthetics, and in which, in all probability the tongue was skilfully pulled forwards in the recognised way, but the patients died. The author would be sorry to pretend to state of what they died, but he could not avoid the belief that in each case the epiglottis in all probability was not raised, and continued unlifted till death was complete. It could but be thought a happy feature, that instruments, the delays in getting them, in using them, the occasional violence and the invariable wounding with them, yet the utter helplessness without them, were in the procedure submitted so entirely superseded. It was not pretended that never before had the epiglottis in this way been lifted. For more than twenty years the author himself had published and illustrated a certain position in the treatment of apnœa. This position inevitably opened the epiglottis, but he did not know it. The old-fashioned swinging by the feet, the *tête à bas*, the inversion of the entire body, the chucking under the chin, the jerking the angle of the jaw—in each of these the good done, and which was the only and all-sufficient reason for the habit, is an interesting corroboration. Each tended to raise the epiglottis, but the operator did not know it. Further corroboration is in the familiar position instinctively assumed by the croupous, the diphtheritic, the asthmatic, the dying. A diligent search has failed to discover a single record in which any observer states that by pulling forwards the tongue he has seen the epiglottis raised. Nor is there a single reference to anybody who is supposed to have seen it. On the contrary, the facts here submitted have all been many times examined, and have been verified by distinguished anatomists at demonstrations made by the author at the Royal College of Surgeons, England, at King's College Hospital, and at Guy's Hospital; and at the Hospitals la Pitié and Salpétrière,

Paris. The position of complete extension enables certain operations on the throat and pharynx to be done in anæsthesia without the usual peril from drainage into the trachea. The sum of what has been submitted is :—1. That, contrary to universal belief, traction of the tongue cannot raise the epiglottis. 2. By sufficient extension of the head and neck, whether by volition, instinct, reflex action, or by the effort of another—whether in the healthy, the dying, or the dead—the epiglottis is instantly and beyond prevention made completely erect. 3. By complete extension of the head and neck the tongue and velum are as respiratory obstructions, simultaneously with the epiglottis, removed, and without a moment's delay the entire air-way can be straightened, enlarged, and be made free throughout by the nearest person. If syncope happen to be the chief or a secondary factor, this also thus gets the quickest and best correction. The author expresses the hope, as he has the confident belief, that the facts submitted will be found to be permanent additions to our means of averting death. (Lancet, Oct. 27, p. 819.)

NASAL BOUGIES for Use in Hay Fever, &c.

Having been so unfortunate as to have a severe case of hay-fever in my own household, I have been led to make experiments upon nasal bougies, and think that the results are worthy of a brief note as to the best material for the bougies and the best method of using them. Gelatin has been tried in a number of forms and combinations, but without success. The bougies made of it when fresh have not sufficient stiffness to be inserted into a partly occluded passage, although in a few days they become so hard and horny that they are distinctly irritating. On the other hand, as a basis, cocoa-butter seems to be free from objection. Although a little skill is required in preparing the bougies when cocoa-butter is used alone, yet the employment of wax is altogether objectionable. The cocoa-butter I find to be entirely free from irritating properties, and to melt rapidly in the nostril. In my own hands the bougies at first entirely failed to give relief, because, when inserted, they fell back into the nasal passages going towards the mouth. If, however, the patient be lying down, and the bougie be pushed forcibly upward, so as to jam itself between the two sides of the upper nostrils, closed by the swelling of the erectile tissue, it will be held firmly in place, and in a couple of minutes melts. After the insertion of the bougie, the patient should still continue to lie down, with a pledget of absorbent cotton that has been wet with cocaine pushed up the nostril, so as to prevent the melting cocoa-butter from running over the lip. The only medicine which I have found of service in hay-fever is cocaine, which, however, seems to act better when added to a little atropine. Each bougie may be made to contain one grain of the hydrochlorate of cocaine and one one-hundred-and-twentieth grain of atropine. (Dr. H. C. Wood, Philadelphia; Therapeutic Gazette, Jan., p. 18.)

NASAL POLYPI.—Removal by the Nasal Snare.

For the removal of mucous polypi, I take up the position that forceps should be entirely rejected in favour of the snare, either the galvanic or the cold. (The structure of these growths and their shape render them much more easily grasped by the snare than by forceps.) Personally, I give preference to the cold snare; it is more handy, can be more easily applied (if used with No. 1 steel piano wire), and though it may at times combine some avulsion with the mere abscission, it leaves less irritation in the nasal cavity than the galvanic loop. In many cases of nasal polypus I find that the least galvano-cauterisation gives rise to considerable subsequent irritation in the form of soreness, erection of the turbinated bodies, watery secretion, &c. The resiliency of the wire above mentioned allows it to be inserted through the nostril as a small loop, which, on pressing down the cross-bar of the snare (a form made for me by Down Brothers), expands to a size sufficient to include any nasal polypus. The grasping of the polypi is facilitated by the use of a little steel hook, which is fixed into the growth, and the loop passed round it. After all that is possible has been snared off, the roots should be touched with a cautery point. This should certainly be done if there is any tendency to recurrence, but in cases in which there is not any evident tendency, I have latterly come to limit my surgical treatment to the accurate removal of all the growths with the snare, and am not sure that my results have not been equally good. For shrinking the roots of the mucous polypi the alcohol spray, 25% alcohol and water, (first recommended for this purpose by Dr. Miller, of Edinburgh), is useful, and its employment should not be omitted. (Mr. Cresswell Baber, p. 306; and British Med. Journal, Sept. 15, p. 602.)

OZÆNA.—Its Treatment by Naphthol.

At the last medical congress of the French Laryngological Society, Dr. Ruault stated that in treating ozæna he irrigated the nasal passages three or four times daily with the following mixture:—To one pint of water add a large spoonful of the following powder: ℞. Borate of soda, bicarb. of soda, āā equal parts. And then a teaspoonful of the following: ℞. Naphthol, 12 parts; alcohol (90°), 84 parts. In very obstinate cases after having performed irrigation with the above, insert into the passage, and allow to remain for fifteen minutes, a tampon saturated with the following: ℞. Naphthol, 12 parts; tr. quillaiae, 88 parts; aquæ dest., 400 parts. The advantages of this treatment are, first, a rapid disappearance of the bad odour; and second, marked diminution of the secretion. The only disadvantage in the use of naphthol is a slight burning sensation, perceived immediately after its application, which, however, soon disappears. It is essential that the irrigating mixture should be freshly prepared before each application. (*Deutsche Med. Wochens.*; Medical News, Dec. 8, p. 647.)

PULMONARY PHTHISIS.—Its Treatment by Creasote.

I am convinced, in view of what I have seen, that we have in beechwood creasote a remedy of great value in the treatment of pulmonary phthisis, particularly during the first stage. Not only does it lessen or cure cough, diminish, favourably change, and occasionally stop sputa, relieve dyspnœa in very many instances; it also often increases appetite, promotes nutrition, and arrests night-sweats. It does *not* occasion hæmoptysis, and rarely causes disturbance of the stomach or bowels, except in cases in which it is given in *too large* doses. (Dr. Beverley Robinson, p. 207.)

[For the details and formulæ of Dr. Robinson's mode of administering creasote internally or by inhalation, we refer our readers to his article at page 207 of this volume of the *Retrospect.*]

Pulmonary Phthisis.—Creasote Inhalations in Cases of.

Dr. Austin Flint presents the following conclusions based on ten cases treated with inhalations of creasote, in his service during the past summer at Bellevue Hospital, by the method suggested by Dr. Beverley Robinson. The improvement noted in these cases, when Dr. Flint took charge of the wards, was so considerable that he directed the treatment to be employed in all the cases of phthisis pulmonalis in the male wards, with the exception of a few in the last stages of the disease. The records of ten cases reported show that creasote by the stomach and the inhalations, in cases of solidification without cavities, effect prompt and decided improvement in all phthisical symptoms, with increase in appetite, weight, and strength, even with surroundings much less favourable than would obtain in many cases in private practice. In cases with small cavities much less improvement is to be looked for, but some benefit may be expected. In cases with large cavities the treatment seems to have little more than a palliative influence. The observations here recorded are defective as regards the influence of the treatment upon the bacilli. In one case, with large cavities, it was noted that the number of bacilli was diminished. No other examinations for bacilli were made during or after treatment. No estimate was made of the relative value of creasote taken into the stomach. As regards the inhalations, it is assumed that the chief benefit was derived from the creasote, the spirit of chloroform and the alcohol rendering this agent more volatile, and soothing the mucous surfaces. The inhaled vapour undoubtedly penetrated by diffusion as far as the air-cells. It is by diffusion that fresh air, anæsthetic vapours, &c., penetrate the lungs, and cases of pneumonokoniosis illustrate the fact that even solid particles may be carried to the pulmonary vesicles. He has employed the method of inhalation here described, conjoined with other treatment, in private practice with good results. In a case of irritative cough of several months' standing, with slight bronchitis and emphysema, but

no signs of phthisis, which resisted ordinary treatment, three inhalations produced complete relief, and the cough had not reappeared at the end of four weeks. (American Journal, Jan., p. 75.)

PHTHISIS.—Its Treatment by Calomel.

Dochmann, in *Therap. Monats.* for Sept., relates his experience with the use of calomel in phthisis. Administered in the first and at the beginning of the second stage, calomel improves the appetite, diminishes the cough and fever, and dispels the night sweats and the objective symptoms. At the end of the second and at the beginning of the third stage, it reduces the fever, checks or diminishes the diarrhœa, and improves the general condition. Whether calomel has a specific action upon the local changes in the lungs, or influences the life and development of the tubercle bacilli, or checks the progress of the destructive process, only more extensive observations can determine. The following formulæ may be used:

℞. Hydrarg. chlorid. mitis grs. x; pepsini ℥j; tinct. opii gtt. xxx. M., ft. pulv., Dein adde Ext. phellandrii aquatic., q. s. ut ft. pil. No. 60.

℞. Hydrarg. chlorid. mitis grs. x; pepsini ℥j; ergotine (Bonjean's) grs. ij; ext. glycyrrhizæ q. s. ut ft. pil. No. 60.

For Hæmoptysis:

℞. Hydrarg. chlorid. mitis grs. x; pepsini ℥j; ext. hyoscyami grs. ix; ext. phellandrii aquatic., q. s. ut ft. pil. No. 60.

On the first day the patient takes six pills (two at intervals of two hours), on the second day five, on the third day four, and from the fourth day he takes two pills, thrice daily, throughout the period of treatment. Every fifth or sixth day, the calomel is intermitted for two or three days, during which time iodide of potassium may be given. The size of the first dose depends upon the fever; should the fever increase, the dose of calomel is increased to twelve or fourteen pills a day. (*Wiener Med. Presse*; Medical News, Oct. 27, p. 473.)

Phthisis.—Its Treatment by Inhalation of Hydrofluoric Acid.

M. Hérard, in the name of a Commission consisting of himself and Drs. Féréol and Proust, presents a report (*Bull. de l' Acad. Méd.*) on the subject of the treatment of phthisis by means of hydrofluoric acid. He points out that the immunity from phthisis of glass-blowers and others exposed to the vapours of the acid has been observed for a long time past, and that efforts were made even in 1862 by Bastien, and afterwards by Charcot, to bring the therapeutic action of the acid into practice in cases of phthisis. In 1885, Drs. Seiler and Garcin again pointed out that it possessed strong antifermentative and antiseptic powers, and more recently experiments have been made by Martin, showing that the acid, even in great dilution, is able to nullify the growth of bacilli in cultivations; while experiments on animals, by which the vapour has been introduced by inhalation, have shown that the phthisical process may thus be effectively hindered. For the treatment of human beings it is

necessary that the vapour should be diffused in a more or less accurately closed chamber, and that the inhalations should be continued for an hour at a time. The best results have been obtained by this means, the appetite being very rapidly recovered, and all the other common symptoms being relieved in a large proportion of the cases. Of one hundred cases, thirty-five are stated to have been cured, forty-one improved, fourteen unaffected, and ten died. The first effects of inhalation were to produce cough, but this difficulty was, as a rule, very rapidly overcome. Dr. Charles Jarjavay (*Bull. Gén. de Thérap.*) collates the various methods that have been recommended for the inhalation of hydrofluoric acid. In all of these the acid is, of course, stored and manipulated in gutta-percha vessels. Where a special inhaling chamber can be contrived, the vapour may be driven into it by means of atmospheric air forced through a mixture of the acid and water in various degrees of dilution. Simpler portable contrivances have been employed, consisting of a bottle containing the mixture of acid and water through which the air may be drawn by means of an india-rubber tube, and inhaled direct; or of a bag containing a definite quantity of air, which is connected by tubing with the acid bottle, two wash-bottles being interposed between the acid bottle and the inhaler. A definite volume of air is thus drawn through the whole apparatus until the air-bag is exhausted. The strength of the acid solution varies from fifteen to twenty or thirty per cent. Dr. Goetz (*Revue Méd. de la Suisse Rom.*) contributes a note on the action of hydrofluoric acid in the treatment of phthisis, in which, after full recognition of preceding work, he advocates the careful trial of the remedy as one which is, at any rate, simple and innocuous, and may greatly contribute to the recovery of early cases. He points out that in this, as in every other form of inhalant, the strength must be so graduated that long continued inhalations can be practised without discomfort. Inhalations that are painful or in any way distressing to the patient are of very little value in practice, as they can never be long continued. Hence no positive standard can be laid down for the strength of the acid to be used in each case. The first sensations on inhaling the vapour are always somewhat irritating to the nose and fauces, but toleration is quickly established, and patients are soon able to inhale the vapour continuously. The remedy has been most successful in the early cases, and the first notable improvement is always in the appetite. Dr. Goetz notes that night-sweating is diminished, but that the fever is not always reduced in proportion to the improvement in other directions, nor do the number of bacilli diminish to any material extent. The same may be said of the local physical signs. Cough is not very much affected, but the sputa, as a rule, become less profuse. Diarrhœa and laryngitis are not much affected, being generally met with in the case of advanced disease. The inhalation after the first few moments is attended with pleasant sensations, and

patients always express themselves as being better for it at the time. Without predicting a great future for the treatment, Dr. Goetz claims that it may rank as a true therapeutic advance. (London Medical Recorder; Therapeutic Gazette, Jan. p. 34.)

TUBERCULAR LARYNGITIS.—Local Treatment by Menthol. The topical use of menthol is highly endorsed by Rosenberg, who has used it uninterruptedly since 1885 *(Therap. Monats.)* commencing with a 10 per cent. solution in oil and increasing to 20 per cent. He claims for menthol an advantage over lactic acid in its analgesic effects, which increase with its use. The pain following its use passes off much more quickly, and it is not at all caustic. A table of 59 cases thus treated is well worth critical perusal. (American Journal, Feb., p. 204.)

Tubercular Laryngitis.—Curetting and Lactic Acid in. Dr. Keimer *(Deuts. Med. Woch.)* reports a number of successes under treatment by curetting and frictions with lactic acid. In one instance four miliary tubercles were seen on the epiglottis, as verified by microscopic examination of the fragments scraped. The principal internal treatment was with creasote. A very important point insisted upon by this writer is avoidance of loud speaking. (Ibid, p. 204.)

WHOOPING COUGH.—Abortive Treatment by Fumigation. Mohn, of Christiania, claims that whooping-cough may be aborted by disinfection of the room by burning sulphur. The patient is moved out, bathed and dressed in fresh clothes, and the room and all its contents, clothes of patient, &c., fumigated by sulphur for the space of six hours. After proper ventilation the patient is moved back, and lo! the whooping cough is cured in an altogether miraculous fashion. (American Journal, Oct. 1888, p. 406.)

[See Articles by Dr. Mohn and Mr. F. E. Manby on this treatment in *Retrospect*, vol. xcviii, pp. 30, 217.]

AFFECTIONS OF THE DIGESTIVE SYSTEM.

ACUTE DYSENTERY.—Administration of Aconite in. Dr. Beatson (*Indian Medical Gazette*) recommends tincture of aconite in this disease; it should be administered in doses of one minim half hourly for eight to ten hours, and then one minim hourly. The frequency of the stools and pain and fever are said to be diminished by this treatment. (American Journal, Jan., p. 64.)

ACUTE RED ATROPHY OF THE LIVER.—Description of. In his address on the Morbid Anatomy and Pathology of Chronic Alcoholism, delivered at the Pathological Society, Dec. 4 [see p. 171], Dr. Payne made the following reference to the exceedingly rare

condition known as Acute Red Atrophy of the Liver:—It is generally admitted to be nearly allied to the acute yellow atrophy, but differs from it, in other respects besides colour. The organ is much reduced in size: the liver cells, as in yellow atrophy, show advanced degeneration and necrosis. Other parts of the organ are of a deep red colour, with little or no liver tissue, and consist chiefly of connective tissue and capillaries deeply engorged, inflamed with infiltration of leucocytes, and showing new formation of fibrous tissue. This short description, founded on a paper by Dr. Moxon in our *Transactions*, and on the only case which I have seen, proves, I think, that the changes are displayed in an acute form, as cirrhosis shows in a chronic form. The connection with alcohol is perfectly clear, though it was not brought out by Dr. Moxon, nor has it been insisted on in the other cases brought before the Society. We have three cases in all: Dr. Moxon's (vol. xxiii), where two brandy bottles were found under the patient's pillow; Dr. Cayley's (vol. xxxiv), in a drinker of spirits; and Dr. Carrington's (vol. xxxvi), which occurred after hard drinking for six weeks. The last I had the opportunity of examining as a member of the Morbid Growths Committee, which gave it the same name as I have done. Cayley, indeed, suggested that the atrophic process supervened on a chronic cirrhosis; but, taking the three cases together, it would seem that the parenchymatous and interstitial parts of the organ were concurrently affected; the former undergoing, as the usual law is, atrophy and necrosis; the latter showing ordinary inflammation. But if there was any difference in order of time, the parenchyma would be likely to suffer first. (British Med. Journal, Dec. 15.)

ANAL FISTULA.—Rapid Cure of.

Dr. Longo concludes his thesis on this subject with the following statements (*Bulletin Gén. de Thérap.*). (1) The method ordinarily employed in the cure of anal fistula, while not entirely exempt from risk, necessitates constant attention for at least thirty days, and predisposes to relapse. (2) From the employment of the antiseptic method, a method of cure is possible in which the result may be attained in a much shorter time. (3) These processes, already employed with considerable success, consist essentially in the entire excision of the fistulous structure and the reunion by the first intention of the outer surfaces. (4) Cure is ordinarily obtained within ten days. (5) The majority of fistulas are amenable to this treatment, which is exempt from danger, which is usually not followed by relapse, and whose employment is not accompanied by any insurmountable difficulties, with the single exception of the rigorous application of the antiseptic method. (6) When the fistulas are united, accompanied by extensive development of pathological tissue, or when their rectal orifice is situated very high up, or when the fistulas are accompanied by hemorrhoids—then only is this method not applicable. (Therapeutic Gazette, Jan., p. 35.)

Anal Fistula.—Blind Internal Fistula-in-Ano.

There are two signs of this condition which will in every case lead to a correct diagnosis. The one is the discovery of the internal orifice, the other, the induration which invariably attends a track of any size. Again, there is something significant in the history, and I have learned by experience, when a patient gives all the usual symptoms of fissure, and yet has no fissure, to examine, under ether, for a blind internal fistula. I say examine *under ether* advisedly, for a complete examination without ether and a large-bladed speculum is an impossibility. Often a careful search over the lower three inches of mucous membrane will reveal a small ulcerated opening, and a probe passed into this will run for an inch or so under the mucous membrane. In other cases the finger will first detect an indurated spot or track, and a careful examination of this will show the opening of the fistula. In the submucous variety there is little or no induration, while in the submuscular the induration is likely to be distinct. (Dr. C. B. Kelsey, New York, p. 323.)

Anal Fistula.—Rules in Operating for Fistula-in-Ano.

In the great majority of fistulæ there is an internal opening into the rectum, but there are many exceptions to this rule, and these must be taken into consideration in operating. For example, the young operator passes a stiff, blunt director into the external opening and feels for its end in the rectum, but cannot find it. Believing that there must be an internal opening, he probes carefully for a few moments and then begins to use force. After a time the end is felt just outside the wall of the bowel, and is pushed through and brought out at the anus, and the incision is made, but it is easy to see that in only a very small proportion of cases can such an incision follow the fistula. In most cases a false track has been made, and in many the sphincters have been unnecessarily divided. The rule, I think, should be this: Begin the dissection at the external opening, and follow the track along inch by inch. If it lead into the rectum there will be no difficulty in finding the opening, and then the sphincter may be cut. If it lead away from the rectum there can be no justification for forcing the incision into the rectum. Sometimes it will be found that the track leads close up to the rectal wall, but the exact point of perforation, if there be any, may not be found. In such cases it is better to make an opening into the bowel and divide the sphincter; for where nothing but rectal wall, and perhaps mucous membrane intervenes between the fistula and the cavity of the bowel, a perforation will probably take place after the operation, even if it does not exist at the time. (Dr. Chas. B. Kelsey, N.Y. Medical Record, Feb. 16, p. 174.)

[See also Dr. Kelsey's articles on the General Principles of the Operative Treatment of Fistula-in-Ano, and on the Blind Internal Fistula, at pages 320 and 323 of this volume of the *Retrospect.*]

CARCINOMA OF PANCREAS.—Diagnosis in a Case of.

At the Midland Medical Society, on Dec. 12, 1889, Dr. Suckling read notes and showed specimens from a case of carcinoma of the pancreas, diagnosed during life. A man, aged thirty-three, a labourer, was admitted into the workhouse infirmary on June 25th, 1888, complaining of backache. This was relieved by a belladonna plaster, and the patient was discharged on July 2nd. On the 19th he was readmitted, with deep jaundice; the gall-bladder could be distinctly felt, and a hypodermic needle was passed into it, a syringeful of dark-coloured bile being withdrawn. Shortly afterwards the patient complained of severe pain in the region of the gall-bladder, and was very faint, these symptoms passing off in a few hours. The stools were ash-coloured, but not apparently oily. The urine contained sugar, its specific gravity being only 1022, and throughout the illness there were none of the ordinary symptoms complained of in diabetes. The jaundice gradually deepened until the patient was of a dark-green colour, especially in the face. He rapidly emaciated, in two months losing a stone in weight. Pain was a prominent symptom throughout, morphia being freely administered; it was felt especially in the back, but also all across the upper part of the abdomen. The liver was small throughout, and no tumour could be at any time felt, though there was decidedly more resistance over the upper portion of the right rectus muscle than elsewhere. Dr. Suckling emphasised the diagnostic features of the case—namely (1) the presence of deep persistent jaundice, with distension of the gall-bladder; (2) presence of sugar in the urine; (3) the absence of any enlargement of the liver; (4) the progressive emaciation and rapid course of the disease, death occurring within five months of the onset of the pain in the back. The carcinomatous growth implicated the head of the pancreas only; the pancreatic duct was dilated, and contained a large calculus. There were no secondary growths. Throughout the case there were no dyspeptic symptoms and no vomiting, the duodenum not being at all obstructed. The severe pain was probably due to the existence of the calculus. Another interesting feature in the case was that the patient's mother and sister suffered from diabetes. (Lancet, Jan. 19, p. 127.)

CHOLECYSTENTEROSTOMY.—Successful Operation.

Cholecystenterostomy, proposed by Nussbaum, but first successfully performed by Kappeler, has again succeeded in the hands of Prof. Socin (*Cor. für Schweitzer*). The patient, æt. fifty-one, had been seized with abdominal pains eleven weeks before the operation, and had shortly become jaundiced. Pain only during digestion. Loss of strength and weight rapidly progressive. On examination marked bronzing of skin and mucous membranes, dryness of the surface, advanced emaciation. The liver extended downward to within a third of an inch of the anterior superior spinous process

of the ileum. Beneath its edge was felt a rounded, smooth, fluctuating, slightly tender swelling, the size of a man's fist, movable laterally. Urine contains bile; the stools showed no sign of its presence. Temperature subfebrile. Weight ninety pounds. Obstruction to ductus communis choledochus was diagnosed. *Operation*: Free incision along the border of the rectus. The peritoneal cavity was opened, the gall-bladder readily drawn forward, opened, and a pint of gall evacuated. Since neither gall-stone nor any other obstruction was found, a cholecystenterostomy was determined upon. The jejunum was drawn out, an incision an inch and a quarter long made in it, and this opening sewed to that in the gall-bladder. Passage, containing bile, in three days, disappearance of icterus, and in a month a gain of nine pounds. (American Journal of Medical Science, Oct., p. 418.)

CHRONIC DISEASES OF ALIMENTARY CANAL AND LIVER.—Small Doses of Sulphur—Compound Sulphur Lozenge.

Sir Alfred Garrod, in a paper on "Some Chronic Diseases of the Alimentary Canal and Liver, also of the Skin and Articulations, and their Treatment by the long-continued exhibition of Small Doses of Sulphur given in the form of the Compound Sulphur Lozenge (for the preparation of which see page 23 of this *Synopsis*), says: As the alimentarycanal is influenced partly by the direct action of the sulphur on its mucous membrane, partly by the circulation of the sulphuretted blood through the intestinal capillary system, and partly by the altered and increased flow of bile from the liver, it will be naturally expected that in morbid states of this canal we should be able to detect marked effects from the continued administration of the remedy. When commencing the use of the small doses of sulphur, I scarcely anticipated that any appreciable laxative effect would be produced by them; in this, however, I was mistaken, and although the word purgative is too strong to be applied to the action of a single lozenge taken at bedtime, still, in the majority of cases, it is sufficient to prevent the necessity of ordinary aperients being administered. In several instances I have known distinct purgative effects produced by the five grains of sulphur given in the form of the lozenge; but this may be looked upon as exceptional. That the secretion from the liver is increased in cases of sluggish action of that organ is often very noticeable in the altered character of the fæces; many patients have informed me that under the influence of the drug their motions have been brought from a pale clay colour to the normal state; and although the action of the sulphur is slow compared with that of mercury, still in chronic torpid conditions of the liver, the advantage of the sulphur over the mercurial treatment is undoubted. When we consider that the most important salt of human bile—namely, taurocholate of soda—is a sulphur compound, and one containing a large percentage of that element, it might almost have been anticipated that the administration of

sulphur for a long time would produce a marked alteration of the biliary secretion. In the case of sodium, the other ingredient or base, which is united with both the taurocholic and glycocholic acids, we have good evidence that its influence on the secretion of the bile is well marked; hence in hepatic and stomach disturbances we usually select sodium salts in preference to those of potassium or lithium; hence, also, the value of Vichy, Marienbad, and Carlsbad waters in the treatment of chronic hepatic diseases. It is probable that the alimentary canal is more affected by the secondary action of the sulphur upon the intestinal glands than by the direct action of the drugs, and that the increased peristaltic effect is dependent to a great extent upon the increased glandular secretion. In hemorrhoidal conditions not suitable for surgical interference, and in some cases of bleeding from the rectum, I have seen the most marked beneficial effects from the continuous sulphur treatment; the bleeding is often completely stopped, and great relief of all the symptoms obtained, especially the accompanying pruritus. A horse artillery officer returned from India suffering from hemorrhoids to an extent which almost incapacitated him from performing his military duties. As it was not practicable for him to have any surgical operation at the time, I suggested he should take a sulphur lozenge each night for some months; he did so, and at the end of four months had recovered so completely as to feel equal to return to India and resume active duties. Another case recently seen is of some interest. A middle-aged lady gave the following history of her ailment. For many years she had suffered from attacks which were called hepatic colic, and in the intervals of the severe attacks she had constant trouble, evidently connected with the imperfect action of the liver. She had been to Carlsbad and Vichy several times, usually with more or less advantage, but with no approach to a cure. After treating her for the discomfort she was at the time suffering from, I ordered the sulphur lozenge to be taken each night for many months—in fact, till her return to town. I saw no more of her for ten months, and then found that she had persevered with the treatment and had wonderfully improved; the attacks of colic had gradually lessened both in frequency and severity, and were practically removed; and her last visit was more for the purpose of inquiring if she might still continue the use of the lozenge than from need of further treatment. I have been told by some few patients that they have experienced much relief from the lozenge in regard to a chronic discomfort of the throat (probably pharyngeal), which had either alternated with or accompanied a morbid condition of the rectum. My case-books furnish me with numerous cases in which the long-continued use of small quantities of sulphur has proved of great value in chronic diseased conditions of the alimentary canal, but I think what I have already stated is sufficient to direct the attention of the profession to the subject. Scarcely a day

passes in which I am not told by some one or other of the great benefits experienced from the use of the lozenge; and it is not unusual to find that if prescribed for one member of a family they are soon taken by several others. (Sir A. B. Garrod, Lancet, April 6.)

CIRRHOSIS OF LIVER.—The Curability of.

Dr. Millard, at a late meeting of the Société Médicale des Hopitaux, of Paris, presented three patients from his private practice, in whom, after a lengthy treatment for this affection, he had been able to effect a cure. The first was a man, fifty-five years of age, who drank regularly from four to five bottles of wine daily. Suffering from dyspepsia for several years, he, in July, 1886, began to emaciate; the supervening ascites necessitated six tappings, from which over two hundred pints of fluid were removed. Since the month of November, 1886, the patient has been put upon an exclusive milk diet, with the administration of an infusion of juniper, and drastic purgatives twice a week. At the end of four months the improvement was already well-marked. The second patient, who partook of four pints of white wine daily, had been under the author's care for one year only. The treatment was the same as in the first case; improvement showing itself more rapidly; the patient continues in excellent health. The third patient underwent the same treatment, with greater and more marked improvement than in either of the foregoing cases. At present the three patients seem apparently quite cured, the only remaining sign of their trouble being a slight hypertrophy of the liver. The formula of the juniper infusion is as follows:

℞. Juniper berries, ℥ ijss; infused in water, ℥vjss. Then add Acetate of potassium, nitrate of potassium, āā grs. xxx; oxymel of squill, ℥ ijss-℥j; syrup of five roots, ℥j.

(Syrup of five roots (sirop des cinq racines) is a French diuretic preparation, composed of the following roots: Ash, fennel, parsley, asparagus, and small holly, each 1 part, and sugar 30 parts.) The author further remarked, that he never hesitated to have recourse to tapping, whenever diuresis seemed insufficient. The only food allowed was milk; alcohol in all forms was strictly withheld. The infusion of juniper is not disagreeable to the taste. The author administered it whenever an increased urinary secretion was called for. The patients took it readily, one of them having taken it daily for eight months. (*Revue de Thérapeutique;* Med. News, Feb. 2, p. 125.)

Cirrhosis of Liver, with Ascites.—Calomel and Digitalis in.

While calomel is used with general success as a diuretic in cardiac and renal diseases, opinions are divided as to its employment in cirrhosis of the liver. Upon the suggestion of Senator, Dr. Schwass (*Berlin. Klin. Wochens.*) has used calomel and digitalis for ascites following hepatic cirrhosis, with extraordinarily fortunate results. In the case of a forty-five year old man, who had been in the hospital ten months, requiring puncture at least twice monthly to

evacuate the fluid which collected in the peritoneal and right pleural cavities, the ascites disappeared upon energetic treatment with calomel in conjunction with repeated punctio abdominis, and the patient in a few weeks recovered to such a degree as to be able to leave the hospital. Temporary benefit was attained in the grave complications of cirrhosis with organic heart disease, nephritis, and tubercular peritonitis. The combination of calomel and digitalis possesses greater advantages. It often acts beneficially when one or the other alone fails. A further advantage is, that with the simultaneous administration of digitalis calomel is borne better and for a longer period—that is, its unpleasant secondary effects, ptyalism, stomatitis, and gastro-intestinal catarrh, either do not appear at all or appear only in a mild degree, or at a later stage than common. A grain and a half of calomel and three-quarters of a grain of digitalis are given every three hours for a week. It is an advantage if the cases are treated early. In advanced stages of the cirrhotic process permanent benefit can scarcely be expected. Based upon numerous observations Schwass makes the recommendation, in suitable cases of ascites from hepatic cirrhosis—that is, when no complication with grave disorder of some other organ exists, excepting affections of the heart, and when the disease has not yet entered upon the last stage, that an attempt be made with calomel and digitalis to prolong life, perhaps with a restoration to activity. (*Wiener Med. Presse;* Medical News, Oct. 27, p. 473.)

COLECTOMY for Malignant Disease.

At the Royal Medical and Chirurgical Society, on Feb. 26, 1889, Dr. Kendal Franks, surgeon to the Adelaide Hospital, Dublin, read a paper on Colectomy for Malignant Disease. It recorded two cases of malignant disease (cylindrical epithelioma) of the colon in which operative measures were employed to remove the tumours. The first occurred in a labourer aged forty-five, who was admitted into hospital on Feb. 12th, 1887, suffering from diarrhœa, abdominal pain, pyrexia, and a swelling in the left iliac fossa. An operation was performed on March 18th, and the tumour was found to be a breaking-down epithelioma involving the sigmoid flexure and part of the descending colon. The parietes were implicated. The colon and sigmoid flexure, with the growth and part of the abdominal wall, were excised. The lower end of the gut was inverted, closed with sutures, and returned; the upper end was brought out at angle of the wound in the loin, and an artificial anus made. The abdominal wall was closed with sutures. The patient died on the sixth day from exhaustion. There was no peritonitis, but the intestines were found in a condition of complete atony. The second case was in a man aged fifty-eight, who was admitted into hospital on Oct. 19th, 1888, exhibiting dyspeptic symptoms, diarrhœa, and a remarkably movable tumour below the umbilicus in the middle line. An operation was performed on Oct. 30th.

An abdominal incision was made in the linea alba. The tumour was found to be an epithelioma surrounding the transverse colon near the hepatic flexure. The intestine on each side of the tumour was divided, and the tumour excised, with several glands, which were enlarged, between the layers of the meso-colon. The divided ends were sutured together with Gély's suture and returned to the abdominal cavity. On the sixth day there was a very copious motion per anum, and the bowels acted regularly afterwards. The patient was now in very good health, and had increased much in weight. From a consideration of the cases collected by the author which had hitherto been published, and which numbered fifty-one, it appeared that the operation had proved fatal in 40·8 per cent. In twenty of those which survived operation the disease returned in ten, and in the remainder the period which had elapsed was too short to draw conclusions from. One case was alive four years after operation. The author drew the following conclusions:— (1) Colectomy rarely effected a cure. (2) As a palliative measure it was justifiable, and frequently demanded. (3) Recurrence usually took place in the liver or mesenteric glands, and death then was much easier than when the intestine was occluded. (4) The mortality after immediate suture of the intestine and after the formation of an artificial anus was nearly equal. (5) Immediate suture of the divided ends was preferable to the formation of an artificial anus. (6) The death-rate had been reduced in the later cases, and a further reduction might be anticipated. A statistical table, which accompanied the paper, gave details of the fifty-one cases hitherto published, including the operation and date, the seat of the disease, the length of gut removed, the treatment of the resected intestine, the situation and length of the wound in the abdominal wall, the result, and the reference to publication. From this list it appeared that the first operation was done by Reybard in 1843, and was successful, the patient living for a year afterwards; and the list included cases by Messrs. Bryant, Marshall, Treves, Sydney Jones, Whitehead, and Pitts in this country. (Lancet, March 2, p. 426.)

COLOTOMY (INGUINAL).—A Supplement to the Operation.

At the Medical Society, on January 14, 1889, Mr. Herbert Allingham read a paper entitled "An important Supplement to the Operation of Inguinal Colotomy." He had observed that after several of his cases of inguinal colotomy the patients had suffered from a distressing procidentia of the intestine through the inguinal opening. He had at first imagined that this had arisen from too large an incision in the groin; acting on this, he diminished the length of the wound, but the results failed to verify this hypothesis. At length he came to the conclusion that procidentia occurred only when the sigmoid mesentery was of considerable length. By the aid of diagrams he showed how a lengthy mesentery would allow of

procidentia occurring at each action of the bowels. To prevent this he devised the following method of operating in cases where the condition of the mesentery was as above described. He pulled out through the wound all of the intestine that would possibly come forth. These portions he allowed to rest upon the abdomen, and then sutured. From twelve hours to three days afterwards he entirely removed all these pieces or bunches of intestine, first of all applying a clamp about an inch from the wound to prevent the intestine slipping. Experience taught him that the clamp must be spiked, and must possess a firm and tenacious grip, otherwise severe hemorrhage might ensue. The clamp should be allowed to remain on for twelve hours ; indeed, so long as any slackening of it produced bleeding. A necropsy at St. George's Hospital on a patient who died some months after undergoing inguinal colotomy had furnished the requisite confirmation of his theory, there being no mesentery and no procidentia. He admitted that this further procedure, by increased danger of hemorrhage, aggravated the seriousness of the operation, but to his mind to allow procidentia to occur or to continue, practically nullified the good effects of inguinal colotomy. In all cases, therefore, of innocent stricture or growth, where the patients were likely to live for some time, he would draw out, make tense, clamp, and remove the intestine. In bad cases of malignant disease he would not carry out this operation. He had treated five cases by the method above described, and he related these in detail to the Society. The chief points in the operation were—1. The fact that pain occurred when cutting through the mesentery, but not when dealing with the intestine proper. In the former case the use of ether was necessary. 2. The supreme importance of using a spiked clamp that would under no circumstances slip or relax its hold ; its correct use would prevent serious hemorrhage, the only thing really to be feared. 3. The great length and weight of the portions of intestine removed. Specimens were shown varying in length from four to twelve inches, and in weight from three ounces and a half to six ounces. He advocated the adoption of his method in lumbar colotomy where procidentia also occurred. (Lancet, Jan. 19, p. 124.)

COLOTOMY (SIGMOID).—Results of the Operation.

I have now performed sigmoid colotomy thirteen times for malignant disease of the rectum, and can say that no patient has died as the result of the operation. The most successful, as regards duration of life, was a personal friend, aged thirty-eight. Inguinal colotomy was completely performed on Nov. 9th, 1884, and death took place on Feb. 12th, 1886 ; but it must be borne in mind that this gentleman's social position enabled him to command every attention with regard to diet, nursing, medical supervision, and other details which make life bearable under such circumstances. In hospital practice, unless the operation is performed very early

in the disease, the duration of life is much shorter than this. To sum up, if life is to be prolonged and rendered as comfortable as possible, sigmoid colotomy should be performed at an earlier stage of the disease than is now customary; that is, when defecation becomes painful or difficult. The operation should not be postponed until obstruction is complete. To render it most successful, divide it into two stages and pay every attention to small details. It is desirable so to operate that two distinct and separate openings are formed in the flexure, and all sources of irritation removed from the malignant neoplasm. (Mr. T. F. Chavasse, p. 314.)

DIGESTIVE DISORDERS of Children.—Salicylate of Bismuth in. Dr. Ehring (*Gazette Hebdom.*) has administered salicylate of bismuth at the clinic of Prof. Ranke to more than two hundred children suffering from various gastro-intestinal troubles, consisting of simple dyspepsia, acute and chronic gastric catarrh, gastro-intestinal catarrh, intestinal catarrh, enteritis, dysentery, &c. In the greater number of cases the children were in their first infancy, but some of the cases were children of 10 or 12 years of age. The salicylate of bismuth was preferably administered in the form of a mixture, 4 to 5 parts by weight to 100 parts of water, with 10 to 20 parts of glycerin, or, better still, in some syrup or mucilage with a little red wine. Of the above mixture a dessertspoonful was ordered every two hours, or oftener if occasion demanded. In cases of flatulence with considerable distention of the intestine with gas, or where the stools had a markedly offensive odour, salicylate of bismuth given before meals is claimed to have had a good effect. It is never prudent to prescribe the remedy to young children in the form of a powder, from the liability which it has of producing ecchymoses in the gastric mucous membrane. Constipation is said not to be a counter-indication for the use of bismuth, The salicylate of bismuth is claimed by the author to be rapidly absorbed, the stools never showing a trace of salicylic acid; no phenomena of intoxication, however, were ever noted. The author concludes that, without being a panacea for all gastric or gastro-intestinal affections, it may nevertheless be employed with great success in innumerable cases of digestive disturbance, even when washing out the stomach or intestinal irrigation had proved inefficacious. It is also worthy of note that during all the time of administration of this remedy the urine is strongly acid, hence the author suggests its employment in cases of cystitis. (Therapeutic Gazette, Dec., p. 840.)

DILATATION OF THE STOMACH.—Treatment. Ott (*Deutsch. Med. Wochen.*) says that the treatment of dilatation of the stomach must always depend on the cause of the affection, since there is no treatment applicable to all cases. The cause should be removed when possible, but when this is a stenosis, we can only treat the disturbed chemical processes of digestion, and in this way

often cure the ectasia. The chief means to this end is the systematic lavage of the stomach. In carcinomatous ectasia this procedure is very useful, combined with the administration of peptone preparations. In dilatation from hyperectasia unlimited supplies of water cannot be allowed, and the intense thirst must be quenched by iced milk or pieces of ice. Massage, properly carried out, is a very useful measure. Electricity, as faradization, should also be employed, one pole over the left hypochondrium, and the other movable from the cardia to the pylorus. The current should be rather strong, and the *séance* last five minutes. The administration of Carlsbad water is also a very useful adjunct, since it diminishes the secretion of hydrochloric acid. Given in the morning, it can take the place of the lavage, which would otherwise be necessitated at this time, and this procedure may be reserved for evening, instead of being applied twice daily. (American Journal, Feb., p. 183.)

Dilatation of Stomach.—Internal Electrical Treatment.

The cases of dilatation of the stomach to which direct electrical treatment is appropriate, according to Dr. Baraduc, are those only which are functional and dependent chiefly on atony of the solar plexus. In these he finds direct faradisation not difficult to manage. One terminal of terra-cotta is laid on the epigastrium, and the other of copper, in the form of a short stem, is passed into the stomach in the tube of a stomach-pump, and not allowed to come into contact with the gastric walls, by being kept some two inches above the tip of the tube. Before introducing the tube some mineral water is given to fill the stomach; and after the electrical action has been begun and gently increased, the contraction of the stomach is generally clearly felt by the patient, and the results made manifest by some slight reflux of the contained water up the tube of the stomach-pump. The machine should be kept at work for five or ten minutes, and the tube then withdrawn. The rest of the treatment should consist in rest for the stomach, with some external friction with camphorated oil, a spare nitrogenous diet, with a little milk only as fluid. The points of improvement which generally follow are these:—(1) There is complete disappearance of the aching pain in the back and the epigastrium. (2) Manifest contraction of the stomach can be determined, so that its lower border rises some two inches or more, and lies above the umbilicus. This second result is best obtained when the coils are of thick wire, but that is more irritating when the stomach is very sensitive. The pain, on the other hand, is best quieted by the action of coils of thin wire. (3) With the reduction of pain and contraction the thirst diminishes, and the quantity of urine passed increases to the normal. This may result from the increased absorptive power of the alimentary tract, and possibly also from the electrical stimulation of the renal ganglia. External faradisa-

tion (Erb) or external application of a frequently interrupted continuous current (Dujardin-Beaumetz, Bardet) are methods which are far less efficient in those cases in which dilatation has gone far. (*Journal de Méd.;* Practitioner, Dec., p. 455.)

GALL BLADDER.—Statistics of Operations on the.

Dr. A. Depage, in the course of a paper upon Surgical Intervention in Biliary Lithiasis (*Journ. de Méd. Brux.*, 1888, No. 24), says that up to the present there have been 78 cholecystotomies performed. Of these operations, 6 were done according to the method of Spencer Wells, 72 with suture of the gall bladder to the abdominal wall. Of the first-named series, 3 died from acute peritonitis, 1 cured case was followed by recurrence, and 2 cases were completely cured. Of the second series there were 11 deaths, 5 from hemorrhage and collapse, 2 from biliary retention, 2 from effusion of bile into the peritoneum, and 2 from undetermined cause; there were also 4 deaths from secondary complications. Amongst the "cures" are 24 cases of biliary fistula, some permanent. The number of cholecystectomies has been 22, with two deaths from obstruction of the bile duct, and 1 after recovery from the operation from a cause independent of biliary lithiasis. Thus in cholecystotomy with suture of the gall bladder, and its return free into the abdominal cavity, a mortality of 50 per cent. resulted; in cholecystotomy with suture of the bladder to the parieties, 15·27 per cent.; and in cholecystectomy, 9·99 per cent.; and as the last-named figure comprises the two cases of permanent occlusion of the common bile duct, the result, if they be excluded, is to greatly enhance the position of cholecystectomy as an operation to be preferred to cholecystotomy. (Lancet, Jan. 12.)

GLYCERINE SUPPOSITORIES.—Method of Preparation.

Suppositories of glycerine may thus be made: Ten parts of particularly hard, dialyzed stearin soap are dissolved in hot water, the solution mixed with ninety parts of pure glycerine and passed through a steam filter; the filtrate, melted, is divided into one hundred parts and poured into moulds. The suppositories are firm and transparent; as they are hygroscopic, they should be incased in tin-foil. Two sizes may be prepared, one of about 26 grains, another of 38; the former should contain about 24, the latter about 36 minims of glycerine. Dietrich's idea to combine glycerine with soap is most happy and rational, as soap, which has long been used in suppository, is a vehicle which does not interfere with the action of glycerine, but aids it. (*Prager Med. Woch.;* Medical News, Nov. 3, p. 500.)

Glycerine Suppositories for Constipation.

I would call attention to the administration of the drug in the glycerine and soap suppositories referred to, as an elegant means of exhibiting the remedy in private practice. I have made a somewhat extended trial of these, modelled after those manufactured by Dietrich. Messrs. Henry C. Blair's Sons, of Philadelphia,

have taken great trouble in perfecting the method of their preparation, and now offer them for sale. 50, 66, and 75 per cent. of glycerine, with soap, was not found reliable. Finally, by using an especially hard castile soap 90 per cent. of glycerine was incorporated in suppositories weighing 52 grains each, and these were efficient in the majority of cases. It is to be remembered that the total amount of glycerine in each (46 grains) is not quite two-thirds of that generally used for an enema (viz., 1 fluid-drachm, 75 grains). If, therefore, a case does not yield to one of them, there would be no objection to giving two at a time. They are very hygroscopic, but when wrapped separately in tinfoil keep very well, and I can imagine no more elegant method of producing an intestinal evacuation than by their use. Very neat little suppositories for babies, holding 10 or more grains, are also supplied. Mr. Jas. J. Ottinger, of Philadelphia, has sent me samples of 90 per cent. glycerine suppositories made with a dry stearine soap, and now offered for sale. He has succeeded in preparing them in such a way that the covering of tin-foil is dispensed with. They are not very hygroscopic, even on exposure to air for some weeks, and present a handsome appearance. I have not myself had any experience with them. Messrs. Parke, Davis and Co. also manufacture 90 per cent. soap suppositories, samples of which they have sent me. I have not yet had the opportunity of trying them. Though glycerine suppositories are somewhat less certain than are the enemata, yet they are not only much more convenient for private practice, but, owing to their rather slower action, I found them entirely unproductive of discomfort, even in the occasional instances in which the enemata have caused slight burning. (Dr. J. P. Crozer Griffith, p. 216.)

HEMORRHOIDS, PROLAPSE, &c.—Treatment by the Douche.

The cases in which it may be desirable to use this method of treatment may be divided into two classes: first, those affecting the lower end of the bowel and its outlet; second, those involving the genito-urinary system. Among the first the most important are hemorrhoids, internal and external, prolapsus ani, and slight cases of prolapsus recti; pruritus ani and eczema of the margin of the anus should also be included in this group of cases in which it has now for some time been my habit to prescribe the systematic employment, twice daily, of the bidet, once immediately after the daily stool, and for the second time, by preference, just before going to bed. As a rule, in all but the mid-winter months, the ordinary temperature of Schuylkill water is that to be preferred, although I am largely governed by the feelings of the patient in this respect. An enema should be taken at each of these times, the lower portion of the rectum being thus thoroughly washed out at least twice daily, after which the stream of water is allowed to play upon the affected region for a period of from five to fifteen minutes. The

ordinary and useful effect of cool sponging or washing immediately after stool in cases of hemorrhoids is by this means enormously increased; internal hemorrhoids will, under this treatment, in many cases almost entirely disappear, unless they are exceedingly large and have been frequently inflamed or strangulated and badly neglected; external hemorrhoids, even when fleshy, will shrivel and become scarcely noticeable. (Dr. J. W. White, p. 333.)

HERNIA into the Foramen of Winslow.

Mr. F. Treves reports (*Lancet*, Oct. 13) a case in which there were symptoms of acute intestinal obstruction, with moderate abdominal distension, but very conspicuous bulging of the anterior abdominal wall in the epigastric and hypochondriac regions, with dulness on percussion and tenderness over the whole epigastric area. Rectal examination revealed nothing. An exploratory operation was performed on the eighth day by median section. It was impossible, on account of intestinal distension, to demonstrate the precise relation of the parts, but a hernia through the foramen of Winslow was thought to exist. It could not be reduced, and as it was not possible to enlarge the opening without dividing the hepatic artery, portal vein, and bile duct, the attempt at relief was abandoned. The patient died in six hours. At the autopsy it was found that the cæcum, the whole of the ascending colon, and a part of the transverse colon, had passed through the foramen and become strangulated. The cæcum was to the extreme left of the abdominal cavity, and had forced its way through the anterior layer of the gastro-hepatic omentum, so that the vermiform appendix was actually lying on the anterior aspect of the lesser curvature of the stomach, close to the œsophagus. This hernia is very rare. The foramen is placed above the intestinal area; will usually only admit a finger or thumb; the only portions of the bowel in close relation to the foramen are the duodenum, the hepatic flexure of the large intestine, and the transverse colon, all of which, as a rule, are firmly fixed. Mr. Treves thinks that such a hernia is only possible when an abnormality of the intestine and its mesentery exists, which represents a reversion to the condition of intestine met with in the lower animals. The cæcum and ascending colon in this case, together with the jejunum and ileum, were slung by a common mesentery, the attachment of which to the posterior parietes was about the duodenal region. There was no mesentery with normal attachments. Only four similar cases have been recorded; they are quoted by Mr. Treves. (American Journal, Dec., p. 631.)

HERNIA (UMBILICAL).—A Case in which 15 inches of Intestine were Resected with Success.

At the Medico-Chirurgical Society of Edinburgh, on June 6, 1888, Dr. J. M. Cotterill narrated the following case:—The patient was an enormously stout woman, weighing 18 or 19 stones, and was

seven months pregnant. An umbilical hernia of some standing came down and could not be returned. Her medical attendant put on a firm binder, and sent her into the Maternity Hospital, under the impression that the child was dead, and that she was about to miscarry. On arrival there her condition was at once recognised, and she was transferred to the Infirmary. When admitted she was collapsed and *in extremis*. There was a large bright red tumour on the top of an enormous abdomen. Dr. Cotterill resolved to give her the chance of an operation. An incision 9 inches in length was made and the sac opened into. A gangrenous and burst intestine and gangrenous omentum were then found. The omentum, sac, and sloughs of cellular tissue were removed, and fifteen inches of gangrenous large intestine cut away. The two ends were left at the umbilicus, no attempt being made to unite them. The woman was got back to bed alive, and fed per rectum. Thirty-six hours after the operation she gave birth with one pain to a child, which lived for several hours. Afterwards the woman made an uninterrupted recovery. She still defæcated at the umbilicus, but Dr. Cotterill hoped to remedy that by a second operation. The part of intestine removed was from the transverse colon. (Edinburgh Med. Jour., Sept., p. 266.)

HYDATID OF LIVER.—The Surgical Treatment of.

The plan of treatment I now adopt for all ordinary cases of hydatid of the liver is first to try the effect of evacuating the fluid contents by the aspirator, and, if this fails after one or more repetitions, to cut down upon and expose the cyst, tap it, and, having removed the fluid part of its contents, to incise its walls and stitch their divided edges to the edges of the incision in the abdominal parietes. I do not first stitch the liver tissue over the cyst or the cyst wall to the parietal peritoneum, and subsequently open the cyst (although I have adopted this plan for abscesses), nor do I use any other kind of means to secure adhesions between the cyst wall and abdominal wall before operating. In no case of hydatid tumour of the liver which is detectable at the bedside in a person otherwise in fair health should I allow the patient to go without surgical treatment, because, though hydatid tumours will exist for years without causing trouble or giving rise to symptoms and subsequently dry up, none take this course after they have passed the size of an orange. When they have attained a size large enough to be recognised and to give rise to symptoms, they invariably go on growing, and generally end fatally if not cured by surgical means. In the slight operation of aspirating there are one or two small points to which I attach importance. First, when withdrawing the cannula, I take care to press back the abdominal parietes, and keep them in contact with the liver, so as to prevent the escape of any of the hydatid fluid into the peritoneal cavity. Secondly, I allow no manipulation of the abdomen immediately after puncturing, but I apply for three or four days a soft elastic compress of cotton wool

over the cyst, which is retained by a bandage, not by strapping; strapping is less comfortable, and allows of no yielding to the respiratory movements or intestinal distension. Thirdly, it ought to be borne in mind that during the first week or ten days after the tapping there may be some return of the swelling, due, not to reaccumulation of hydatid fluid, but to inflammatory effusion around and within the cyst wall; so that it is not advisable to resort to a second aspiration of the cyst until these inflammatory products are aborbed—i.e., if the swelling is but moderate, not until a fortnight or three weeks have elapsed, and it has become clear that the tumour is again steadily increasing. I believe that by these means we may altogether avoid exciting peritonitis or suppuration of the cyst in cases suitable for tapping. The conditions under which suppuration is prone to follow tapping are just those in which tapping is inappropriate—namely, the presence of a large number of daughter cysts or the cysts of very great size. One important precaution is observed after laying open the cyst. It is—never to pull away any still adhering part of the parent cyst, but to leave it to loosen and be cast off. There is often a great temptation at the operation to remove large portions of partially adherent cyst wall, but it should be resisted for fear of inducing considerable, and may be even fatal, hemorrhage. (Mr. Henry Morris, Lancet, March 16, p. 529.)

ICTERUS NEONATORUM, and its Relation to Sepsis.

From the opinions of many recent writers, it is evident that while some forms of icterus are due to mechanical causes, i.e., are of hepatogenous origin, others are due to chemical or hæmatogenous causes. There is no theory which will apply uniformly to all cases. In the great majority of cases, where there is merely the discoloration of the skin and mucous membranes, there is no sepsis; the functions are properly performed, the fæces are of yellow colour, and the urine without bile pigments. The condition is then merely a hæmoglobinæmia, which is physiological within certain limits. In other cases where the icterus is more profound, the fæces nearly or quite without bile, and the urine containing bile pigments and bile acids, the evidences of constitutional affection are more pronounced, and there is present undoubtedly hæmoglobinæmia, or cholæmia, or toxæmia, but no evidence of sepsis or septic infection. The umbilicus is healthy, and there are none of the ordinary symptoms of phlebitis, though the cases may go on to a fatal issue. These cases may depend on non-closure of the ductus venosus, malformations, weakness of the heart, pulmonary atelectasis, and other causes which lead to insufficient tension in the portal vein, with consequent stasis, effusion of bile, and subsequent resorption. In the third class of cases there are distinct evidences of septic poisoning. The skin may or may not be very yellow; there is great constitutional disturbance, high temperature, dry tongue, tender and swollen

belly, ulcerated and purulent umbilicus, and there may be chills and abscesses in the parenchyma of the tissue or elsewhere. Such cases seldom live beyond the nineteenth day. This is the *icterus malignus* of some writers; and Birch-Hirschfeld has found both rod-shaped and spherical bacteria in the discharges from the umbilicus. Thus broad distinctions must be drawn between those cases of icterus which are caused by an excess of hæmoglobin in the blood, those which are due to a resorption of bile, and those which result from septic elements and conditions. (Dr. Underhill's Periscope, Edinburgh Med. Journal, Jan., p. 674.)

JAUNDICE (Persistent).—Subcutan: Injection of Pilocarpin in. I have, of course, used pilocarpin quite commonly in Bright's disease, and still do as a usual thing, and it seldom fails to induce a copious diaphoresis; but one day it occurred to me to order a third of a grain as a subcutaneous injection in a case of chronic jaundice with intense itching. It occurred to me that a drug which so uniformly was productive of speedy diaphoresis must profoundly modify the functions of the skin for the time being, and might in doing so relieve the itching which has hitherto, in my experience, defied treatment. It did so quite beyond my expectation, and kept the patient comfortable until she died. In the next case it was equally successful. The patient had one-third of a grain injected subcutaneously many times, and always with this result, that the first twenty-four hours he was quite free, the second he was fairly free, and the third day he was getting bad again, and the dose had to be repeated. I next tried it on an old lady who suffers from very frequent attacks of gall-stones. She is equally decided as to the relief she obtains, but her pleasure is to some extent marred by her skin being for the time converted, as she describes it, into the similitude of that of a laundrywoman. I have had six cases in all, and in none has it failed; and when we consider that really there is nothing that can be relied upon to relieve this most distressing feature of jaundice, I hope the suggestion may prove of service. The other class of cases in which it seems to me to be occasionally of value is where the lightning pains of locomotor ataxy are severe. I have two or three times found it useful in these cases when many other means had been tried and failed. (Dr. J. F. Goodhart, Brit. Med. Journal, Jan. 19, p. 120.)

MILK JELLY, as a Variation in Milk Diet. The *American Druggist* gives the following directions for preparing milk food. As a variation in milk diet, the following is recommended by Professor Liebreich: Heat one quart of milk with one pound of sugar, and when the sugar is dissolved continue the heat, at a boiling temperature, for about ten minutes. Now cool it well, and then add—*slowly* stirring—a solution of one ounce of gelatin in a cupful of water. Next add the juice of three or four lemons and

three wineglassfuls of wine, brandy, or other liquor. Set the glasses containing the mixture in a cold place, so that the contents may gelatinize. It is necessary to have the milk quite cold before the other ingredients are added, as it would otherwise curdle. (Therapeutic Gazette, Dec., p. 863.)

OBSTINATE VOMITING.—Use of Paraldehyde in.

Dr. La Moure (*Albany Medical Journal*) has found small doses of paraldehyde successful in relieving obstinate vomiting from ovarian irritability, with sympathetic stomach disorder, and in the distressing nausea of migraine, with the most gratifying results. The formula employed is as follows: ℞. Paraldehyde, ♏xl; elixir simpl., ℥j. M. S. One teaspoonful in a little water, repeated in half an hour if required. This small dose is not hypnotic in its effect. But few doses are usually required. The only objection to its use is its disagreeable odour. (American Journal, Jan., p. 65.)

OXYURIS VERMICULARIS.—A Mixture for.

The following mixture is said to be highly efficient: ℞. Tinct. rhei, gtt. iij; tinct. zingiberis, gtt. ij; magnesii carbonatis, ℥iv; aquæ, ℥iij. M. This amount to be given three or four times daily, according to the effect produced. The rhubarb may act as a vermicide or as an agent which simply detaches the worms. In either event it causes the expulsion of great numbers of them and induces regular bowel movement. (Medical News, Sept. 29, p. 351.)

PANCREAS.—Clinical Significance of Clay-coloured Stools, sine Jaundice; and their connection with Disease of the.

At the Royal Medical and Chirurgical Society, a paper upon this subject, by Dr. J. J. Walker, was read. After referring to the accepted views of the significance of clay-coloured stools, the author gave particulars of two cases in which, during life, a persistent symptom was the absence of colour in the fæces, and in which the diagnosis made of obstruction of the pancreatic duct, with a healthy condition of the bile-duct, was confirmed by the necropsy. From these cases Dr. Walker concluded, first, that the formation of hydrobilirubin, the colouring matter of the fæces, depended on the mutual reaction of the bile and pancreatic fluid, under the influences met with in the intestinal tract; secondly, that in disease a deficiency of pancreatic fluid would, equally with a deficiency of bile, cause the pathological condition of colourless or clay-coloured stools; thirdly, that since, according to the most recent physiological researches, that portion only of the coloured constituents of the bile which had been converted into hydrobilirubin was excreted in the fæces, while the unchanged bilirubin, bilifuscin, and biliverdin were absorbed, it followed that, if hydrobilirubin could not be produced without the aid of the pancreas, that organ must have an important

rôle in regulating what proportion of the bile entering the intestines should be absorbed and what thrown off in the fæces. Dr. Walker then pointed out that these conclusions received confirmation from the records of other published cases, that Claude Bernard recognised that the pancreas had a part in causing the colour of the fæces, and that the state in which the bile pigments were found in the meconium of the fœtus, while the pancreatic function was in abeyance, also accorded with these conclusions. He further pointed out that the fact of the pancreas influencing the excretion of the bile in the fæces would, if accepted, reconcile the discrepancy between the clinical observation that certain drugs produced copious bilious stools, and the physiological observation that these drugs had little or no influence on the secretion of bile by the liver, and that the same fact would explain those hitherto inexplicable cases in which, with no evidence of arrest of the bile-secreting functions of the liver, or of obstruction of its ducts, the symptom of white or clay-coloured stools was persistently present. In conclusion, Dr. Walker indicated the practical importance of the views he had endeavoured to establish in the treatment and diagnosis of pancreatic disease and of all forms of bilious disorder. (British Med. Journal, Mar. 30, p. 711.)

PERITONITIS.—The Treatment of.

The treatment that will give the best results, according to my view, is the following: In all cases in which no physical obstruction can be diagnosticated (for which operation must be at once recommended, and this should include doubtful cases in which operation may subsequently become necessary) there should be prescribed liquid diet, small quantities every two hours, and every two hours a quarter of a grain of opium, and one twelfth of a grain of extract of belladonna. To this may be added, if it should seem advisable on account of pain, the administration twice (or at the outside, four times in twenty-four hours) of a one-grain powdered opium suppository. At the same time injections of warm water, with or without soap, should be given once to three or four times daily. If flatus is passed, the case continues to be a very hopeful one. This course should be rigidly adhered to for from 24 hours to five days, or possibly longer, when the time will have arrived at which it becomes necessary to consider the propriety of using some sort of aperient. (Dr. A. V. Meigs, p. 219.)

Peritonitis.—The Treatment of.

I should say that when called to attend a patient suffering with peritonitis we should first determine the cause, and if it is found to be an organic one, the immediate use of the knife, followed by irrigation and drainage, is the only proper method of procedure. Should the cause be found to be functional, the use of purgatives, followed, if necessary, by enemata, is indicated; and these failing to relieve quickly, surgical methods should soon follow. If the case is of doubtful character, I would be inclined first to try the purgatives,

and stand ready to interfere with the knife at a moment's notice. Of course, it is impossible to lay down any absolute general rules for the treatment of every case, as each and every one must be a study of itself; and yet, as nearly as rules can be laid down, the above seem to me to be the proper ones. (Dr. J. M. Baldy, Philadelphia, Medical News, Dec. 8, p. 645.)

Peritonitis.—The Use of Purgatives in.

Purgatives are given in peritonitis for two distinct purposes: first, to increase the peristalsis, and thus overcome obstruction; and, second, to induce large watery movements, for the purpose of directly depleting the abdominal, and especially the intestinal, bloodvessels. After operations, inflammation in greater or less degree is so common, and we are so well aware that it is liable to occur, as to be always prepared to meet it. This being the case, it may be met in its very incipiency, and if inflammation can ever be aborted, it is under such circumstances. The explanation of the success, therefore, of surgeons in treating peritonitis with large doses of saline purgatives would seem an easy one, for they deal with a stage of the disease which never comes under the management of physicians, as people in the early stages of the disease do not seek advice, and, besides, if they did, the differential diagnosis between idiopathic peritonitis in its earliest stage and enteritis or mere intestinal irritation would be an impossible one. No one, I think, should deny surgeons the credit their courage deserves for having instituted this revolutionary method of treatment, for, measured by our old standards, it is revolutionary; but at the same time we must not err upon the other side, and with undue haste conclude that the method is applicable to all cases. (Dr. A.V. Meigs, p. 220.)

TUBERCULAR PERITONITIS.—Condition of Lungs in.

The condition of the lungs in those affected with tubercular peritonitis is especially important, as we often meet with practitioners who refuse to acknowledge a case of peritonitis to be of tubercular origin, unless there are well-marked evidences of pulmonary disease. Dr. Bristowe says that in forty-eight of the cases he analysed there were tubercles in the lungs in forty-two, and Dr. Hilton Fagge states the proportion to be seven out of nine. Now, in thirty-eight of our cases the condition of the lungs is expressly mentioned, and in five of them no trace of disease could be discovered. One of the five had died of acute pneumonia; there were general adhesions of the abdominal viscera and old cretaceous deposits, proving the previous existence of tubercular peritonitis, and yet no tubercles had been developed in the pulmonary organs. In two more of the thirty-eight only a few scattered tubercles existed in the lungs. Cavities are mentioned in only nine, and of these five were instances of "fibroid phthisis." As in the remaining cases there were only "scattered tubercles" or "tubercular con-

solidation," we may conclude that it is comparatively rare for the peritoneal mischief to be developed in persons suffering from chronic phthisis, and that therefore the serous membrane is generally affected before the onset of the pulmonary disease. (Dr. S. Fenwick, Lancet, March 2, p. 412.)

Tubercular Peritonitis (Acute).—Clinical Characters of.

We may sum up the clinical characters of this form of tubercular peritonitis by saying that they consist of more or less acute pain of the abdomen, increased by pressure, accompanied by elevation of temperature of an irregular kind, the evening temperature being usually much higher than that of the morning, by increased rapidity of pulse, rapid loss of flesh and strength, thirst, loss of appetite, and continuous diarrhœa, or by diarrhœa alternating with constipation. The cases of acute tubercular peritonitis may be included in two groups. In one the febrile symptoms are the more prominent, and those relating to the abdomen are comparatively slight; such cases closely simulate typhoid fever. In the other the abdominal symptoms are the most marked, and the fever is moderate; such cases resemble ordinary peritonitis. (Dr. S. Fenwick, p. 224.)

Tubercular Peritonitis (Acute).—Diagnosis of.

The diseases with which we are most apt to confound acute tubercular peritonitis are typhoid fever and acute non-tubercular peritonitis, and in some instances the resemblance is so close that it is only by great care and watchfulness that we can avoid falling into error. As a general rule, tubercular peritonitis of this kind begins suddenly, whilst typhoid is usually preceded by a period in which the patient has been weak, feeble, and feverish. In the former, pain in the abdomen is more marked, and there is tenderness over different parts; whilst pain in the latter is rarely severe, and any tenderness that may be present is confined to the iliac region. In tubercular peritonitis the temperature rises at once, and not regularly, as in enteric fever, and the pulse is usually more rapid. As the case proceeds the temperature varies more in peritonitis, spots are rarely observed, and the stools have not generally the typical appearance of those passed in typhoid; whilst at a later period the persistence or frequent returns of abdominal pain and tenderness and of vomiting, the variations of the temperature, the alternations of constipation with diarrhœa, and the increasing prostration, will in most instances enable you to distinguish between these diseases. In addition to these differences, you will in many cases be able to render your diagnosis more certain by the discovery of fluid in the peritoneum, or by the detection of a tumour in the abdomen; or you may find the signs of effusion in the pleura or of a consolidation in the apex of one or both lungs. Still more difficult is it to distinguish between acute tubercular peritonitis and ordinary peri-

tonitis when the former does not assume from the first the typhoid form. In many cases I believe it is impossible to arrive at a certain conclusion in the early stage, for both may attack persons previously healthy, both may be ushered in by similar abdominal symptoms, and it is only by watching the progress of the disease that you can form an accurate opinion. As a general rule, the pain, tenderness, and vomiting are less distressing in the tubercular form, the temperature is lower, and there is more usually diarrhœa than constipation. As the disease progresses, the abdominal symptoms recur from time to time instead of slowly subsiding, the temperature remains high, emaciation becomes more marked, the effusion into the peritoneum is very slowly absorbed, and you may discover signs indicating effusion into the pleuræ or pulmonary consolidation. (Dr. S. Fenwick, p. 225.)

ULCERATION OF TONGUE AND MOUTH Cured by Opium.

At the Medical Society on Feb. 25th, 1887, Mr. Shield showed a case of Ulceration of the Tongue and Mouth, cured by Opium. A carpenter, aged fifty-six, had suffered for three years from obstinate ulceration of the sides of the tongue and gums. The affection varied in severity from time to time, but was always a serious trouble, and sometimes prevented him from eating or speaking. No cause was attributed for the occurrence of this malady. He had been a temperate man, and had never suffered from syphilis, nor been employed in glass-blowing, nor immoderately fond of pipe-smoking. He had, however, been living in a poor way, and his general health had deteriorated greatly. A variety of treatment had been adopted without relief. On examination, the man looked pain-racked, worn, and haggard. There were marked fætor and salivation. The left side of the tongue was superficially ulcerated in several places, the ulcers being covered with débris of food and superficial slough. The right side of the tongue was less affected. The gums were ulcerated round the teeth, and the posterior molars were loose. The mucous membrane was healthy, excepting in the situation of the ulcers. The glands beneath the jaw were enlarged. The ulcers were acutely painful, and the man had to subsist upon fluid nutriment, which he swallowed with difficulty. For three weeks the tongue was treated without any benefit. The remedies employed were small doses of blue pill and colchicum, potassium iodide, and tonics; locally, solutions of cocaine and antiseptic mouth washes. A solution of chromic acid seemed only to aggravate the malady. After three weeks the use of opium was commenced; an opium pill of one grain was administered thrice daily, and a simple carbolic mouth wash used locally. In three days the pain was much less, and the ulcers were decidedly more healthy in appearance. In three weeks the ulcers had entirely healed, the only sign to indicate their previous presence being the glazed appearance of the sides of the tongue and the loose teeth. The man, being able to

eat and drink freely, had wonderfully improved in appearance. The use of opium in this case was suggested by a paper read by Mr. George Pollock and published in the *British Medical Journal* of April 26th, 1884. There he narrated a case very similar to the above, though much more severe, where the effects of opium were most beneficial. His patient had undergone a variety of treatment, including the application of nitric acid, by an eminent authority. The action of opium was difficult to explain in such cases; its undoubted efficacy in painful and sloughing ulcers was perhaps hardly enough appreciated in the present day. (Lancet, March 2, p. 429.)

AFFECTIONS OF THE URINARY AND GENERATIVE SYSTEMS.

ACETONURIA, and Its Relation to Diabetic Coma.

At the Royal Medical and Chirurgical Society on November 27th, a paper by Dr. Samuel West was read on Acetonuria and its relation to Diabetic Coma. The following is an abstract. The relation of acetonuria to diabetic coma had been investigated by experiment and by clinical observation, and this paper was a contribution to the clinical side of the problem. The results of experiment were briefly referred to, and the conclusion to which they led. Clinical observation was for a long time difficult from the want of trustworthy tests. A short account of the chief ones was given: 1. Lieben's iodoform test. 2. Gunning's and Le Nobel's modification of it. 3. Reynolds' test. 4. Legal's test with nitroprusside of potassium. 5. Le Nobel's modification of it. 6. Penzold's test. Legal's test was found to be the most convenient for use in the urine direct, and Lieben's in the distillate, but this reaction was also obtained if alcohol was present. But if the urine gave Legal's, and the distillate both Legal's and Lieben's tests, the presence of acetone might be accepted. As control experiments two series of convalescent cases were examined. In the first thirty cases, a doubtful Legal's reaction was obtained in three. In the only one which was distilled neither test was obtained in the distillate. In the second series of about the same number no evidence of acetone was obtained in any. Of non-diabetic patients actually suffering from illnesses at the time of examination, acetone was found in fifteen cases. Acetonuria was therefore very rare in healthy or convalescent persons, but common in various forms of acute and chronic disease. Of diabetic patients fourteen were examined, four being at the time comatose. In some of these cases the examination was continued for many days. The following conclusions were arrived at:—1. Acetonuria was common in diabetics without coma. 2. It was not constantly present in cases of diabetic coma. 3. It varied greatly in the same case from time to time without definite cause. 4. It varied independently of vari-

ations in the amount of sugar, specific gravity, &c. 5. It might even disappear when coma developed. The iron reaction showed also no relation either to coma or to acetone. Experiment and clinical observation therefore led to the same conclusion—viz., that acetone could not be the cause of diabetic coma. Clinical observation, however, seemed to show that acetonuria had a clinical value as indicating that the patient was in a more critical condition than when it was absent. The symptoms of diabetic coma depended, in all probability, upon acute intoxication by some substance rapidly generated within the body, but at present unknown. It might be that in the perverted chemical processes which developed it, acetone and the allied body giving the iron reaction were produced, so that the presence of these bodies in the urine might serve as "danger signals." (Lancet, Dec. 1, p. 1068.)

[NOTE.—A convenient method of performing Legal's test is as follows: Take half a test-tubeful of urine and add to it one or two drops of a saturated solution of nitro-prusside of soda; shake the test-tube to ensure complete mixture, and then gently float on to the top of the column of urine a small quantity of liquor ammonia B.P. If acetone be present a red or purple coloration will appear at the junction of the fluids.—ED. *Retrospect.*]

ALBUMEN IN URINE.—Quantitative Estimation of.

Hitherto the methods in use—except that of Esbach, which is perhaps open to some objections—were either too complicated in their manipulation, or else took up more time than can be generally afforded by the majority of practitioners. H. Zāhor has, however, in the *Zeitschrift für Phys. Chemie* (12, 484—494), devised a simple process which gives results accurate to the first place of decimals, and which can be carried out clinically. It depends upon the difference in the specific gravity or density brought about in the urine by the elimination of the albumen. Such an estimation is termed a densimetric one. The method adopted is as follows. A preliminary examination of the filtered urine is made in order to determine approximately the amount of dilute acetic acid necessary to precipitate all the albumen when boiled. This is easily ascertained by taking a small quantity of urine in a test tube, adding acetic acid, and boiling. The urine is then filtered from the coagulum, when the filtrate should yield no further precipitate with acetic acid and potassium ferrocyanide. A convenient quantity of the filtered urine, after the addition of the proper quantity of acetic acid, is then placed in a flask well fitted with a good cork. The flask with its contents is next placed for ten or fifteen minutes in a bath containing water constantly boiling. This brings about the precipitation of the albumen, which is then carefully filtered off into a flask fitted with a cork with a hole in it, through which the funnel is passed. It is advisable to cover the funnel during filtration with a glass plate. The density of the urine and the filtrate is

then determined by means of a urinometer graduated to the fourth decimal place. Of course the temperature must be the same for both liquids. This precaution is easily taken by placing them in two glass cylinders immersed in a bath of water kept at a convenient temperature—e.g., 17·5° centigrade. The difference between the initial density and the final density is then multiplied by the factor 400, the product giving the number of grammes of albumen present in 100 cubic centimetres of the urine. The factor 400 is found to yield by experiment with a number of albuminous urines approximately accurate results, and depends upon the mean value of the specific gravity of albumen, which was found by the author to be 1·3747. It does not, however, appear to yield such good results with fluids containing albumen other than urine. (Lancet, Nov. 24.)

CYSTITIS IN WOMEN.—Combined use of Dilatation of the Urethra and Carbolic Acid.

The method of dilatation should, in all cases, be conjoined with the topical application of carbolic acid to the mucous surface. The latter is best employed in the form of glycerine of carbolic acid of the *Pharmacopœia*, which is quite strong enough for this purpose, and introduced by an ordinary stilette, armed with a piece of absorbent cotton saturated in the application, and passed through my dilator so as to avoid any of the acid being brushed off in the canal until it reaches the fundus vesicæ, where it should be retained for a couple of minutes until every part of the vesical wall contracts firmly upon it. The urethral canal is then to be similarly brushed out by another application of the carbolised glycerine. The pain caused by this procedure may be prevented by previously introducing in the same way a ten per cent. solution of cocaine. I have only to add that, according to my experience, the plan of treatment now recommended seldom requires to be repeated more than two or three times, at intervals of a week, to effect a cure of even the most aggravated cases of cystitis in women. (Dr. T. More Madden, British Med. Journal, March, 2, p. 468.)

DIABETES.—The Use of Codeine in.

The evidence seems to indicate that codeine is a less powerful remedy in diabetes than either opium or morphine, and to confirm the view that in its therapeutic value it ranks as a weak or diluted morphine. The conclusion receives an importance (no doubt a subsidiary one) from the circumstance that codeine is about three times as expensive a substance as morphine. The great demand for it has led to its being manufactured from morphine so largely, that probably one-fourth of the codeine in the market is an artificial substance. When we consider the large doses that are required in diabetes mellitus, and the generally protracted duration of this disease, we are, I think, justified in asking for more clear evidence of its superiority over morphine than has as yet been produced. (Dr. T. R. Fraser, Edinburgh, p. 242.)

DIURETIC FOR CHILDREN.—The Juice of Juniper as a.

Dr. Goldschmid, of Fehraltorf, highly praises the inspissated recent juice of common juniper berries as the best diuretic in children. Attention was drawn to this remedy by Professor J. Vogel, of Dorpat, in his classical handbook on children's diseases. While being most effective, the remedy is exceedingly mild and altogether free from any unpleasant accessory effect. Two or three teaspoonfuls should be given daily, diluted with water and sweetened with sugar. The little patients take it very readily. The author describes a severe case of nephritic dropsy in a girl, aged 7, where the juice rapidly induced a profuse diuresis, a complete and permanent recovery ensuing in a fortnight. (British Med. Journal, Jan. 12, p. 102.)

FATTY TUMOUR OF THE SCROTUM.—Description of Case of.

At the Pathological Society, on Feb. 19, 1889, Mr. Hutchinson described a case of large Fatty Tumour of the Scrotum, consisting of ordinarily soft yellow fat well encapsuled. It had been excised from the scrotum of a gentleman of about forty-five years of age, in whom it had been growing for more than fifteen years. It enveloped the testis, and the patient had been sent up to town in the belief that it involved the gland, and that removal of the whole would be necessary. It was not, however, found necessary to sacrifice the testis itself. The tumour had a tail which passed up in front of the cord, but did not in any way adhere to it. Its coverings were very thin, and it was not possible in the dissection to say whether any of the proper tunics of the cord were divided or not. No cremasteric fibres were observed; but whilst there was no proof that it was under these coverings, it might perhaps be inferred from analogy with other cases that probably it was so. Mr. Hutchinson referred to a paper by his eldest son on this point in the Transactions of the Society, in which a collection of cases was made in illustration of "Lipomata in Hernial Regions," and in which the belief was expressed that all fatty tumours found in the scrotum had been developed in the extra-peritoneal fat, and had travelled downwards under the spermatic coverings. He alluded also to a case under the care of Mr. Bryant, in which, on account of a fatty tumour enveloping the testis and adhering to it, it had been necessary to remove the gland; in this case the necropsy showed that there was a large fatty mass in the abdomen, probably continuous with that in the scrotum. In Mr. Hutchinson's own case there had never at any stage been any simulation of hernia, and the patient did not himself believe that the tumour had travelled down from the groin. It was so soft that before removal it closely simulated a large hydrocele. (Lancet, Feb. 23, p. 379.)

GLUTEN BREAD.—For Diabetics.

Dr. Woltering, of Münster, in Westphalia, who writes from personal experience, gives the following receipts for preparing gluten

bread; he recommends the gluten meal manufactured by Dr. Joh. Hundhausen, of Hamm, in Westphalia, which contains 76 per cent. of albuminoids, and 2 per cent. of carbo-hydrates. The bread is, he says, most conveniently and easily made with baking powder. Mix one and a half heaped tablespoonfuls of baking powder with 500 grammes (1 lb. 2 oz. nearly) of gluten meal and rub the mixture through a sieve; rub up well in a bowl till thoroughly mixed, and work into a dough with a quarter of a litre (half a pint nearly) of lukewarm water; it is now ready to be put in baking tins and baked in a hot oven. It may also be made with yeast. Mix the same quantity of gluten meal with one halfpennyworth of "German" yeast dissolved in a few tablespoonfuls of warm water, and work into a dough with a quarter of a litre of lukewarm water. Put the dough, which is as sticky as glue, in warmed and buttered baking tins; it will rise in from one and a half to two hours. Bake for from one and a half to three hours in a hot oven; turn every hour. The bread ought to have a hard, brittle, brown crust and a light grey crumb. Like all gluten bread, it has a sour taste, which is not altered by the addition of egg, milk, butter, or bicarbonate of soda to the dough. Saccharin gives an unpleasant sweet taste. Cream corrects it better than anything else, but it is not noticed if the bread is buttered and eaten with some savoury, such as a sardine. After one or two days the bread remaining grows tough, and should be toasted or cut into fingers and baked in the oven until brittle. This toasted bread is palatable with butter, or may be crushed and used for making puddings. The bread made with yeast contains 53·9 per cent. albuminoids, 0·2 per cent. fat, and 2·6 per cent. carbo-hydrates. (Brit. Med. Jour., Nov. 17, p. 1124.)

INTERMITTENT AND LATENT ALBUMINURIA.

The following are the conclusions appended to a paper by Dr. George Johnson upon the Clinical History of Intermittent and Latent Albuminuria. (1) The presence of albumen in the urine, though small in amount and occasionally intermittent, is always pathological. (2) The practice of testing the urine in all cases of ailments, even the most trivial—the importance of which I have for many years past insisted upon—has led to the detection of albuminuria in many youths and adolescents who are especially liable to be exposed to the commonest of its exciting causes, namely, cold and wet and over-fatigue, and who have not lived long enough for the ultimate evil results of a neglected albuminuria to have become developed. (3) The albuminuria, whether intermittent or persistent, of persons apparently in good health has no such special features as to require it to be designated by such misleading terms as "physiological," "functional," "cyclical," and "the albuminuria of adolescence." The last term is especially inappropriate, since the condition is of common occurrence in both sexes and at all periods of life, from childhood to extreme old age. (4) In almost every in-

stance these cases of albuminuria may, by a careful inquiry, be traced back to some recognised exciting cause. (5) Nearly all cases of acute nephritis pass through the stage of intermittent albuminuria in their progress towards convalescence, and, on the other hand, the majority of cases of intermittent albuminuria may be traced back to a more or less remote attack of acute nephritis. (6) While, on the one hand, intermittent albuminuria, even though it may have existed for years—may be looked upon as a curable condition, if only its exciting causes can be ascertained, avoided, and counteracted by suitable dietetic, medicinal, and hygienic means, on the other hand, the neglect of such means may convert an intermittent into a persistent albuminuria; and a persistent albuminuria, although for many years it may be unattended by symptoms of disordered health, ultimately results in a fatal degeneration of the kidneys. (7) Since it is notorious that albumen, even to a very large amount, may exist in the urine of persons who are apparently in perfect health, it is obvious that the urine of every patient, no matter how apparently trivial his ailment, and the urine of every applicant for life assurance, no matter how robust his appearance, should be tested for albumen. (8) For many years past the fact that albumen may be abundantly present at one period of the twenty-four hours and entirely absent at another has been publicly demonstrated, and ought to be generally known. It is, therefore, necessary to test the urine, not only after rest in bed and before breakfast, but also after food and exercise.

With regard to the question of albuminuria in life assurance, no prudent medical officer would advise that a proposed assurer with a trace of albumen in the urine should be accepted at the ordinary rate of premium. Such a condition, even in a careful and prudent man, must involve some extra risk, and no office can insure care and prudence. Whether an albuminuric should be accepted on any terms can be determined only by a careful inquiry into the particulars of each case. It goes without saying that such unquestionable signs of advanced organic disease as albuminuric retinitis and cardiac hypertrophy would exclude the applicant; but Dr. Tyson, of Philadelphia, would not consider that an amount of albumen not exceeding one-fifth of the bulk of urine examined, and unaccompanied by tube-casts, "formal ground for exclusion." As to this, I venture to remark that while small hyaline and epithelial casts are often present in the albuminous urine of patients whose speedy recovery may be confidently predicted, on the other hand, in the advanced stages of a contracted granular kidney (the so-called cirrhotic kidney), the amount of coagulated albumen is often less than one-fifth the volume of urine examined, and the characteristic large hyaline and granular casts may be absent for days, and even for many weeks, consecutively. (Brit. Med. Journal, Feb. 2, p. 225.)

[See also papers on this subject by Dr. Tyson at page 131, and Dr. Ralfe at page 234 of this volume of the *Retrospect.*]

INTERMITTENT FUNCTIONAL ALBUMINURIA.—Its Differential Diagnosis from the Early Stages of Granular Kidney.

Intermittent albuminuria differs in not exhibiting a cyclical or paroxysmal tendency, but occurs sometimes continuously for days, and then intermits, whilst in other cases the intermission is diurnal. The absence of any periodicity or paroxysmal tendency thus distinguishes cyclical and paroxysmal albuminuria from simple intermittent albuminuria; but it is more important to distinguish the latter from the intermittent discharge of albumen, which is frequently observed in chronic interstitial nephritis at that period of the disease when it is passing from the pre-albuminuric stage into that in which the albumen becomes persistent in the urine. Our difficulties are, moreover, increased in this case by the fact that, as the renal epithelium and tubules are but yet little affected at this period of the disease, we do not find casts or desquamated epithelium to help us to form a diagnosis. The only clue afforded likely to be of assistance is to be found in the polyuria and high tension of the pulse, and even these are sometimes not sufficiently well marked to give confidence to an immediate opinion. I need hardly say it is of the utmost consequence for the medical attendant to be aware of this difficulty, and to withhold a too early expression of opinion. He should constantly examine the urine at different periods of the day, and under varying conditions, with regard to food, exercise, regulation of the bowels, and especially compare the amount of urine passed with the quantity of fluid ingested. This latter is a very important point, for I have found that *the polyuria of chronic interstitial nephritis does not depend proportionately on variations in the amount of fluid ingested, but on the degree of arterial tension; whilst in functional albuminuria the correspondence between the fluid ingested and that passed out of the body follows the ordinary physiological law.* The scope of the present paper, however, does not admit of my dealing with the very important subject of the diagnosis between the various forms of functional and organic albuminuria, and I can only insist here upon the utmost care being taken before an opinion is definitely arrived at, more especially as the form of organic albuminuria, which is most likely to be regarded as functional, is that in which the disease has not yet gravely involved the epithelial structure, and in which appropriate treatment can be most advantageously employed. A mistaken view of the case at this period is therefore most disastrous, as time is lost whilst the renal degeneration is advancing. (Dr. C. H. Ralfe, p. 236.)

INTERMITTENT HYDRONEPHROSIS.

Under this heading, Dr. Leopold Landau, Professor of Gynæcology at the University of Berlin, publishes four cases of a disease but little known (*Berlin. Klin. Wochens.*, Nos. 47–8). The definition is limited to those cases where the pelvis of the kidney varies, from time to time, between distension and emptiness, in the absence of

other disease which might exhibit this symptom—for example, passage of renal calculus, malignant disease of the bladder, &c. The symptoms described are more or less severe pains in the side, lasting from hours to days, and recurring at intervals, associated with nausea and vomiting, general gastric disturbance, cardialgia, &c. The flow of urine is scanty during and profuse after the attack. The existence of a swelling which sometimes disappears may be known to the patient, or a hard, non-fluctuating tumour, separated from the liver by resonance, may be made out on palpation. As, after a time, the urinary elements of the fluid are reabsorbed, they may not be found by exploratory puncture, but the acidityof the fluid would be enough to fix the diagnosis. Dr. Landau maintains that spasm of the ureter alone would not be enough to account for the largely distended renal sac, and points out how the ureter may be occluded by torsion or tension, when the kidney is abnormally movable, or when pulled upon by prolapsed genitalia with cystocele, or when the ureter is inserted at a more acute angle. Thus, the pelvis is distended until the pressure is sufficient to overcome the obstruction. With each attack it loses elasticity, and dilates gradually into a large sac, which drags the kidney downwards, thus aggravating the mechanical disadvantage of the contained fluid, for the ureter is inserted then at the top of the sac instead of at the bottom, and is also in greater measure pulled upon, twisted, or "kinked." Finally, neither the recumbent position nor manipulation may be able to effect evacuation, and the cyst becomes permanent and the kidney atrophies. Of the cases, one went on, after repeated attacks, to pyelitis, and is interesting from the fistulous opening then made in the side having persisted discharging clear urine for eight years, with but slight inconvenience to the patient. Two others showed a cessation of the symptoms during pregnancy—when the kidney was kept in position by the gravid uterus. One of them was relieved, on the recurrence of the attacks after confinement, by external pressure by means of an abdominal bandage. All the cases were of women from 30 to 60 years of age. (British Med. Journal, Dec. 15, p. 1351.)

MOVABLE KIDNEY.—A Truss for.

Dr. Niehans, of Berne, had under his care in August, 1887, a woman, aged 23, who suffered from pallor, dyspepsia, constipation, nausea, and other symptoms, as well as the usual pain caused by movable kidney. That condition evidently existed in her case, and she wished the offending organ to be extirpated. Dr. Niehans, however, contrived an apparatus which afforded her great relief. On the principle that the basis of support should be at the pelvis, he made an ordinary double inguinal truss. To this was fitted a steel spring, which ran vertically upwards for a few inches and then bent inwards, fitting by a ball-and-socket joint into the back of a concave steel pad, oval, with its long axis horizontal. The

spring was contrived so that it could be fixed on the truss in such a position as to allow the pad to lie over the right place on the abdomen. The pad, well lined with soft material, was held in place by an elastic waistband which buttoned on to its right and left borders. This band was made light and not too strongly elastic, lest it should pull up the truss. The pad was thus placed at the proper level, the spring next made fast to the truss, and then the kidney was pressed backwards and the waistband fastened; the patient in the meanwhile lying on her back. The apparatus was taken off at night. The patient was delighted with the result, all unpleasant symptoms disappeared, and she was recently in excellent health, able to do her housework. Whenever she omits to replace the truss in a morning before beginning to dress, she feels the old local pain, which lasts for about a quarter of an hour, but steadily disappears after the apparatus is adjusted. (British Med. Journal, Sept. 14, p. 627.)

RENAL DISEASE.—The Cardiac Changes in.

My clinical and pathological studies during the past five years have forced upon me the conviction that simple cardiac hypertrophy is not found in so large a proportion of cases of chronic Bright's disease in America as are reported by English and continental observers; and that when it is associated with extensive changes in the glandular structure of the kidney it is due to the primary arterial rather than to the renal disease. The most constant cardiac changes which I have met with in chronic Bright's disease are dilatation of the heart cavities and degeneration of the heart walls. In most instances where I have found tubular and interstitial changes in the kidneys in addition to obliterating arteritis, cardiac hypertrophy, when present, was associated with degenerative changes in the heart walls and dilated cavities. In those forms of renal disease in which the principal changes were in the tubes, Malpighian capsule, and connective-tissue stroma, with little obliterating change in the vessels, I have found no true cardiac hypertrophy, but rather the changes which are characteristic of a Bright's heart. One who studies Bright's disease clinically in our large hospitals soon realizes that the heaving impulse and the increased arterial tension, which seem to be the essential features of the disease as described by many writers, are the exception rather than the rule, for in most of such cases it is difficult to determine the maximum point of cardiac impulse, it is so diffused and indistinct; and, although the cardiac area of dullness may be increased, the other signs of hypertrophy are wanting, and when, at the autopsy, a large flabby heart is found, one comes to look for other cardiac changes in chronic Bright's disease than muscular hypertrophy. (Dr. A. L. Loomis, p. 197.)

[See also Dr. Loomis's article on the Cardiac Changes in Chronic Bright's Disease, at p. 175 of this vol. of the *Retrospect.*]

RETENTION OF URINE IN FEMALES.

In the later weeks or days of pregnancy, when the uterus is pressing considerably upon the neck of the bladder, one can easily understand how it produces retention of urine. I simply mention it here because it is just one of those things that are apt to be overlooked. A woman makes a certain amount of water, but the bladder is more or less distended, and therefore, when you are called in to attend a labour, always ascertain whether the bladder is empty or not. I suppose there are no more unfortunate cases than those where a child's head has been allowed to press upon a full bladder, for those are the miserable cases where you have ulceration and consequent vesico-vaginal fistula. If you always pass a catheter or see that the bladder is empty in every case of labour, you will hardly ever have such a thing as vesico-vaginal fistula. There is another class of cases of female retention which should not be treated with the catheter; that is the hysterical. Young women sometimes cannot or will not micturate, and it is a mistake to use the catheter if you can avoid it. Every now and then you are obliged to use the catheter, but it should not be used if it can be avoided, because you can really treat those cases more satisfactorily without it. The great thing is to put the treatment in the hands of a judicious matron. Let her put the patient into a bath of warm water, and then, without giving her notice, throw a bucket of cold water over her back and shoulders. The sudden shock from the cold water over the trunk will produce a violent expiratory effort, which will overcome the already relaxed muscular fibres of the sphincter vesicæ, so that the urine passes, and there is an end of the difficulty. (Mr. Christopher Heath, p. 335; and British Med. Journal, Oct. 27, p. 919.)

SUGAR IN THE URINE.—The Detection of.

In studying the question of the significance and detection of traces of sugar in the urine, with some reference to life insurance, the *Dietetic Gazette* concludes that:—1. Normal urine contains no sugar. 2. The reducing power of normal urine upon cupric oxide and picric acid is due to uric acid $\frac{1}{4}$ and kreatinin $\frac{3}{4}$. Both these bodies are removed by adding to the unconcentrated urine one-twentieth its volume of a cold saturated solution of sodic acetate, and then one-fourth its volume of a cold saturated solution of mercuric chloride, after the manner described by Johnson. 3. Any reduction of either cupric oxide or picric acid after this manipulation is due to the presence of sugar. 4. Sugar may persist in traces, unaccompanied by the diabetic element. 5. Diabetes may be warded off by recognition of the first appearance of sugar as a persistent ingredient of the urine. 6. The importance of this subject to life insurance companies, in view of the facts above stated. 7. The detection of traces of sugar in the urine requires special skill and care, and a low specific gravity should not be considered conclusive evidence of the absence of sugar. (Polyclinic, Dec., p. 175.)

SUPRA-PUBIC CYSTOTOMY.—The Transverse Incision in.

At the New York Surgical Society, on November 28th, 1888, Dr. Gerster testified to the advantages of the transverse incision, especially in the case of fat patients, or where it was necessary to make a large opening in the bladder. The longitudinal incision did not give sufficient room. The transverse cut was useful when the pubo-vesical fold of peritoneum was situated so low that the opening in the bladder could not be safely enlarged upward. The operation with this incision was performed more rapidly, since it was only necessary to find the symphysis pubis, to put the recti on the stretch, and then to divide them by simple nicking, the scalpel hugging the bone. Dr. Gerster had hoped that there would not be so much liability to renal complications when the bladder was opened and drained in the manner described, but he had had two cases in which the kidneys were affected, one of which terminated fatally. He thought that vesical drainage after epicystotomy was not always perfect, especially when the bladder was atonic and did not contract well. Pockets sometimes existed in the organ, which did not drain thoroughly, even when the patient was kept in a semi-prone posture; on irrigating the bladder through the urethra, masses of pus would suddenly escape at a time when the irrigating fluid had been returning in a clear state for some time. (New York Medical Journal, Feb. 2, p. 133.)

URETHRAL STRICTURE.—Curability of.

Dr. E. S. Keyes of New York concludes an important paper on this subject with the following observations: "I may state that electrolysis with a very mild current—I prefer to put it at less than two milliampères and a half—does no harm; in fact, does nothing that I can appreciate, and does not interfere with the benefit to be derived from ordinary dilatation. I believe that a strong current is full of danger, both immediately from irritating effect and ultimately from cicatricial effect; and that employment of the negative pole does not prevent this. My study of the subject and the experience it has brought me, digested with all the impartiality I possess, lead me to state that the allegation that electricity, however employed, is able to remove organic urethral stricture radically, lacks the requirement of demonstration. The confidence of its advocates that it will radically cure organic fibrous stricture is, in my opinion, due either to the combined credulity of the patient and imagination of the surgeon, or to some special but fortuitous act of Providence, upon the co-operation of which, in the case of his own patients, the general practitioner cannot with any confidence rely." (N.Y. Med. Jour., Oct. 8.)

VARICOCELE.—The Treatment of Ordinary Cases.

With regard to the treatment of ordinary cases, it is obvious from what I have said that the majority of these require merely a little

management of a very simple kind, the wearing of an adequate suspender and the avoidance of anything like constipation being all that are necessary. It is quite curious how little care seems, as a rule, to be taken to provide patients with really appropriate suspenders. I suppose the matter must often seem too trivial to deserve attention; nevertheless, the patient's whole comfort not infrequently depends upon these appliances. Suspenders should be fitted to patients like trusses and other similar apparatus. The greater number of those sold by the instrument makers are, so far as I have seen, comfortless, uncleanly, and expensive. Personally, I know of nothing so effective as the old-fashioned washable linen suspender, made merely of a boat-shaped piece of linen, which hangs hammock-like from two tapes, one attached at either end; in this the scrotum and its contents swing most happily. The arrangement combines the requisites of comfort, cleanliness, and economy to a degree possessed by none of the more elaborate contrivances commonly employed. (Mr. Bennett, p. 348, and Lancet, Feb. 9.)

VULVO-VAGINITIS IN CHILDREN.—The Causation of.

Pott (*Archiv für Gynäkologie*, Bd. xxxii, Heft 3) has had ninety-six cases of vulvo-vaginitis in children, more than one-half of whom were under five years of age. He attributes it to direct specific infection, or some general dyscrasia, as syphilis or tuberculosis. Epidemics occurred from the infection of several children in the same family, through the medium of soiled linen, sponges, etc. Cases of direct communication of the virus are rare, the writer having observed only three. The entrance of *oxyures vermiculares* into the vagina was supposed to be a common source of vaginitis, but he found that gonorrhœa was more often the true cause, in fact, he seldom failed to find gonococci. In discussing the above paper, Prochownick stated that he had found the cocci in seventeen out of twenty-one cases of vulvo-vaginitis in children. All these patients suffered from severe urethritis. Sänger said that he had seen epidemics of vaginitis in families. In one instance a girl three and one-half years old developed intense peritonitis in consequence of gonorrhœal infection; he believed that cases of pyosalpinx and old localized peritonitis in young virgins might possibly be referred to gonorrhœa contracted in childhood. (American Jour., Oct., p. 430.)

WHALEBONE BOUGIES for Tight Strictures (Banks's).

For rapidly dilating very fine tight strictures, I have found Banks's filiform bougie of great service. It is an instrument that is well known in America, but not in this country. It is made of highly polished whalebone, on the principle of the wedge, and can be used with great safety. When completely passed through the stricture, a much larger-sized ordinary catheter or bougie can usually be made to follow easily. These instruments, of which there are several sizes, have been supplied to me by Messrs. Tiemann of New York. (Mr. Reginald Harrison, p. 342.)

AMPUTATIONS, FRACTURES, DISLOCATIONS, AND DISEASES OF THE BONES, JOINTS, ETC.

ANTERIOR METATARSALGIA.—Dr. Pollosson's Cases and Treatment of.

Under the name of "anterior metatarsalgia," an affection is described by Dr. Auguste Pollosson, of Lyons, which, though hitherto unrecognised as a distinct affection, has, he believes, a very real existence, being capable of putting a patient who has the misfortune to be its subject to a good deal of serious distress and inconvenience. He describes an instance in which a medical man, twenty-nine years of age, has suffered from this affection for some years. It gives no trouble when the foot is at rest and without a shoe, but is usually brought on by wearing boots and by walking a good deal. It is much more likely to occur when going down than when going up-hill. The pain comes on suddenly, a feeling of something having given way in the foot accompanying the onset, together with a kind of grating sensation. After this the patient walks lame, for all pressure of the anterior part of the sole of the foot on the ground is very painful. If walking is persisted in, the pain increases, till in a few minutes it attains its maximum, rendering all further attempts at locomotion absolutely impossible. The symptoms can be removed by taking off the boot and squeezing the fore part of the foot, especially if the heads of the middle metatarsals are at the same time pressed upwards by the finger. When this is done a kind of grating is again felt, together with a sharp twinge of pain, but almost immediately afterwards the pain entirely ceases. The cause of the affection is evidently a certain laxity of the transverse metatarsal ligament, which permits a partial infraction of the arch formed by the heads of the five metatarsals, one of the middle ones, probably the third, becoming dislocated downwards and compressing the nerves running along each side of it against the heads of the neighbouring bones. Dr. Pollosson mentions a somewhat analogous case, where a young growing girl suffered from hammer-toe from a similar laxity of the metatarsal ligaments. With regard to the treatment of anterior metatarsalgia, the main indication seems to be to pad the sole of the boot so as to prevent as far as possible the descent of the offending metatarsal head. He finds, however, that in the case described the patient is unable to bear as efficient a pad as could be wished, so he uses the half of an indiarubber ball sewn on the sole of the boot, which, though not entirely satisfactory, is still of considerable service. (Lancet, March 2, p. 436.)

CLUB-FOOT.—Prof. Ogston on Huter's Treatment of.

Promiscuous tenotomy is both unscientific and unnecessary; but we can in the first year of life, beginning a few weeks after birth, gradually guide the shape of the limb by applying to it external

and suitable force that, acting on it by long periods, will guide its growth into a better shape, curtailing its morbid convexities, and favouring comparative overgrowth along its abnormally concave sides. The form of the limb, by the slow processes of growth of all its constituents, will gradually adapt itself to such external forces. Of these, splints, elastic traction, and apparatus are all inferior, in my opinion, to the method introduced by Hüter, of rectification by repeated applications of rigid bandages. Hüter rectified the foot a little, fixed it in plaster-of-Paris, removing this and increasing the rectification every few days. The number of cases of club-foot I have treated is 173, and I have found it better to modify Hüter's method in some respects. I prefer beginning at six weeks of age, and then, under chloroform, rectifying the deformities by prolonged and considerable force, applied manually, to such an extent that a great deal is gained, and the foot does not spring back to the old position, the elasticity of its structures being exhausted. Then plaster-of-Paris bandages, made of Cafferatas best plaster (the quality is of the greatest importance), rubbed into narrow, fine, book-muslin bandages, are applied next the skin without intervening flannel or padding, and the foot, retained in position during their application by sticking plaster loops, is held in the nearest approach to normal position obtainable by the hands outside the bandage until it is well set. Bandages next the skin can hardly be kicked off by the child. Each bandage lies, not a day or two, but six weeks, and during that time the patient is not seen, but at the end of that time the mother detaches the bandage with a knife, and brings it back for a renewal of the process. If the bandage be not pulled tight during its application, but laid loosely around, no constriction results, but merely accurate adaptation. I never had to remove but one, and that was, as it turned out, unnecessary. It was in a child aged 7 years, with a nervous mother. The incurved (adducted or varus position) should be completely removed before the plantar (equinus) flexion is meddled with, but once the foot is straight or the anterior part even somewhat abducted, then it should be remedied, and the tendo Achillis always divided. It is useless to try to avoid this; in the early days of my practice I have produced a convex sole by trying to do so, for the plantar fascia and structures arching the instep and fixing the medio-tarsal joint will yield rather than the tendo Achillis. The plantar flexion is overcome by dividing the tendon and by manipulating the foot so as to exhaust the elasticity of the structures resisting, and the limb is then fixed in the improved position by plaster-of-Paris similarly applied and extending high enough to keep the knee-joint quite extended, and prevent approximation of the divided tendon ends, that is, up to above the middle of the thigh. I may be allowed to say that the discussion lately carried on in our medical papers as to the safety of separating the ends of

the tendo Achillis is uncalled for, and that in Germany, and I believe in nearly all Scotland, it has long been known that in tenotomy separation of the divided ends of a non-synovial tendon, such as the tendo Achillis, never prevents reunion, provided the distance between them does not exceed two inches. The foot requires three to eight sittings for rectification of its adducted position, and one to three for that of its plantar flexion, depending on the age of the patient; and when it is begun at six weeks of age it is finished by a year, that is, before the child begins to walk. A slight remaining incurvation of the toes is unavoidable in bad cases, and this method, like all others, fails to remedy the knock-knee and other deformities above the level of the foot, which are part of the arrest of development. This method is the best in very young children, but even in those 3 to 5 years old the bones are in some few instances so firm that it is insufficient, even when great force is applied, and in these occasionally, and habitually in older cases, we must have recourse to the carpentry, but it may always be relied on as safe. No harm can possibly be done to the foot, even by great force. (Professor Ogston, p. 267.)

COCCYX.—Pains in the Region of.

Ménière (*Gazette de Gynécologie*), in addition to the relief of constipation and the use of counter-irritants, advises the following, in suppository, per rectum:—

℞. Ol. theobrom. gr. 20; ex. belladonn. gr. $\frac{1}{4}$; ext. hyoscyami gr. $\frac{3}{4}$; iodoform gr. $\frac{3}{4}$. To be used before retiring.

In *severe coccyalgia* he recommends the following:—

℞. Ol. theobrom gr. 20; ext. valerian. gr. $1\frac{1}{2}$; chloral hydrat. gr. $1\frac{1}{2}$. To be made into a rectal suppository.

(Medical Chronicle, Sept., p. 470.)

COMPOUND FRACTURE.—Removal of Bone in Severe Cases.

Our ordinary practice has been to remove far too little bone; it has often seemed to me, on the other hand, as if the result was better the freer had been the removal of bone. The use of the injured limb is quickly regained, the risk of non-union in fracture or of an ankylosed joint in dislocation is very greatly lessened, and the dangers of necrosis and all septic complications almost entirely avoided. Moreover, a point of no little moment, the sufferings of the patient and the duration of his confinement to bed are greatly diminished by the free removal of the bone. It is well to add that it is not necessary to remove the whole length of the bone they may be denuded of periosteum. In compound elbow dislocations, for example, the lower end of the humerus may be stripped bare for four inches or more, while the removal of an inch and a half may be all that is required. The same is true of compound dislocations of the ankle. It should be remembered that it is not the denudation of the periosteum that causes the bone to necrose in such cases, but the sep-

ticity along the bared bone, and if the latter is prevented by the proper disinfection, drainage, and regular irrigation necrosis is unlikely, indeed, to occur. (Professor Ogston, p. 264.)

DISLOCATIONS OF THE SHOULDER.—Kocher's Method in. At the Medical Society of the State of New York, Feb. 1889, Dr. C. A. Powers, of New York, read a paper with this title, and demonstrated practically also the manipulations needed to reduce without ether or pain this commonest of dislocations at the shoulder. The flexed arm was to be grasped at the elbow with one hand, and the wrist with the other. The elbow was then brought close to the side of the chest and slight traction made. The arm was then rotated outward, until in line with the body, from side to side. The elbow was then lifted upward toward the middle of the chest, and the hand finally carried over toward the opposite shoulder. As used by twenty-five different men in the Chambers Street Hospital in the past five years, it had succeeded on the first attempt and without ether in ninety-eight out of one hundred and twenty-nine cases in which it had been used. He put the patient in the dorsal position, and had an attendant hold the opposite shoulder down. (N. Y. Med. Journal, Feb. 16, p. 189.)

EXCISION OF BONE to promote the Healing of Certain Wounds or Ulcers, or relieve Cicatricial Contractions. At the Medical Society, on February 11, Professor Annandale, of Edinburgh, read a paper with this title. He remarked that the procedure was by no means new, and that his first experience of it was in the practice of the late Mr. Syme, more than twenty-five years ago, since which time he had himself operated upon several cases. For conciseness he considered the subject under the following four heads: 1. The removal of a portion of bone, not including its entire thickness. 2. The excision of a portion of the entire thickness of a bone, or, as in the case of the forearm and leg, of the two bones. 3. The partial or complete excision of a joint when the sore or contracture involved the soft parts in its neighbourhood. 4. The excision of a portion of the entire thickness of one or other of the bones of the forearm or leg in order to allow the proper approximation of the ends of its companion bone which had suffered some loss of substance. In regard to the latter, he observed that, although scarcely included in the title of the paper it was very nearly allied to it. He then described a number of cases illustrating his practice as recorded by other surgeons. One of the most interesting was that in which the Professor had successfully removed $2\frac{1}{2}$ inches of the shaft of the tibia and fibula in order to promote contraction and healing of a large sore upon the leg. In conclusion, he stated that, as a primary operation in cases of injury this procedure was not likely to be useful except in rare cases, as it was impossible in the first instance to be certain of the exact amount of the loss of the soft

parts, and he expressed the hope that the experience of the operations referred to would encourage surgeons to make use of the principle in suitable cases. (British Med. Journal, Feb. 16, p. 359.)

EXCISION OF TUBERCULAR HIP-JOINT.—Primary Union.

At the Royal Medical and Chirurgical Society, on December 11th, 1888, Mr. Bilton Pollard drew attention to the fact that the wounds necessary for extirpation of tubercle from joints would heal as rapidly and as permanently as other wounds of a similar size if certain essential conditions were secured: 1, the whole of the tubercular growth must be removed; 2, perfect asepsis must be assured; 3, bleeding must be checked, and the wound made as dry as possible; 4, oozing must be checked by the even elastic support of a wool dressing and a moderately tight bandage; 5, absolute rest of the part must be maintained during the process of healing. The hip-joint was selected for illustration of the views advanced because the author thought that, of all excised joints, the hip had been found the slowest to heal. Four cases of advanced hip-joint disease with caseous abscesses were referred to. Three were operated upon by the anterior incision, and the fourth by a curved incision round the upper and posterior part of the trochanter. Drainage-tubes were not employed in any of the cases. The dressings were changed on the seventh day after the operations, and the wounds were found to have healed by first intention throughout. With the exception of one case in which the acetabulum was perforated, there had been no recurrence of the disease. (British Med. Journal, Dec. 15, p. 1337.)

FRACTURE OF BASE OF SKULL.—The Diagnostic Value of Hemorrhage from the Ear in.

Dr. Charles D. Bennett, of Newark, New Jersey, U. S., appends the following conclusions to a paper on this subject, "1. That hemorrhage from the ear is, in itself, no evidence of fracture of the base. 2. That hemorrhage from the ear, even in conjunction with other symptoms, must only be regarded as presumptive evidence. 3. That no such diagnosis should be made until the membrana tympani had been examined. 4. That the membrana tympani being unbroken, the bleeding is not due to a fractured base. 5. That all the signs of fractured base may be present with mere concussion of the brain, and that therefore the two injuries cannot always be differentiated. 6. That many cases, now on record of recovery after fracture of the base, were cases of concussion only." (Medical News, Dec. 22, p. 693.)

HIP DISEASE.—Aids to Early Diagnosis.

To assist in making an early diagnosis, a careful study should be made in a difficult and doubtful case of those limitations in the motions of the joint which become apparent only when the extremes of normal motion are approached. This may be done in various ways. I have found two methods easy in practice and

certain in their revelations. The first method applies to rotation, which is a direction in which limitation of motion first takes place. Let the patient lie supine with the feet slightly apart. With the hand placed lightly on the knee of the unsuspected limb a rocking or oscillating motion is given to the whole limb, outward and inward rotation following each other while the toe sweeps through an arc of nearly 180°, the inner border of the foot striking the table, and the outer border nearly reaching that level. This occurs in the sound limb. A similar manipulation of the suspected limb may reveal a slight limitation of rotation, the result of hip disease. The other simple procedure relates to flexion. Let the patient, still on the table, sit up and kiss the knee. By flexing the neck and back and drawing the limb up with the hands, this can easily be done with the unaffected limb, while an attempt to do it with the suspected limb may reveal a slight limitation of flexion indicative of incipient hip disease. Another diagnostic sign, too little thought of perhaps, but of importance in the very early stage, has recently been referred to by Dr. A. J. Steele, of St. Louis, as "a brawny thickening about the joint in front of the capsule or behind the trochanter." There will in some cases be found a condensation of the soft tissues, due apparently to the vicinity of osteitis, not visible perhaps, but recognisable by palpation or pinching with the thumb and finger, and then often not detected except by comparing the two sides. It will be found that a smaller pinch of the skin and underlying tissues can be made on the sound than on the affected side. These tests are to be used, of course, in connection with other diagnostic helps, and with due regard to other conditions which have the power to produce similar phenomena. Properly used, they may betray the presence of hip disease in a patient entirely free from pain and lameness at the time of the examination. (Dr. A. B. Judson, p. 258.)

KNEE-JOINT.—Syphilitic Disease of the.

At the Pathological Society, on Oct. 16th, 1888, Mr. Jonathan Hutchinson, jun., showed a specimen of Syphilitic Disease of the Knee-Joint as illustrating a form of specific joint disease, not, perhaps, previously recognised in this country. The right knee was the only joint affected, and it was obtained from the body of a sailor, aged twenty-three, who died of syphilitic stricture of the rectum and chronic nephritis. The patella was much thickened, and had left its normal groove on the femur to articulate with a ridge on the outer side of the external condyle, in which the cartilage was greatly hypertrophied. The internal condyle of the femur had lost its cartilage and was adherent to the internal tuberosity of the tibia by firm fibrous bands, in which was merged the internal semilunar cartilage. The external tuberosity of the tibia was roughened on its cartilaginous surface. In the centre of the ligamentum mucosum was a leathery gummatous mass, which the

microscope showed to consist of ill-defined cells and fibrous tissue. There were no nodes about the bones and the synovial membrane and ligaments were practically healthy, the chief seat of the disease being in the cartilaginous surfaces of the joints. Unlike chronic rheumatic arthritis, there was no eburnation, although at parts there were grooves in the cartilage, especially one deep one between the facettes for the patella and external tuberosity of the tibia. The changes appeared to be similar to those described by Professor Virchow as due to syphilis, in so far as their chief seat lay in the cartilage (see *Berlin. klin. Wochens.*, Aug. 18, 1884), and to differ from the more common cases of tertiary syphilitic joint disease, in which periosteal nodes or peri-articular gummata were the chief features. Both kidneys were greatly enlarged, weighing together no less than thirty-five ounces, were firm in consistence, pink in colour, mottled with whiter patches, but no isolated gummata were found. Sections showed interstitial cellular exudation, obliteration of many of the Malpighian bodies, and comparatively slight involvement of the tubes. Most probably it was a form of diffuse syphilitic disease. The rectum revealed a fibrous stricture, with extensive ulceration round it. The patient was a Swede, and no clear history of primary disease could be obtained from him; he exhibited no signs of inherited syphilis. (Lanet, Oct. 20, p. 769.)

RICKETS.—The General Treatment of.

This should be by food more than by drugs. Far too much dependence is placed on the latter, to the neglect of dietetic treatment. As a rule, children are overdosed and sickened by Parrish's food and cod-liver oil, to the damage of appetite and digestion. I find that I have to stop these things more often than to order them. Parents have come to consider them as almost essential, and children are drugged with them on the least sign of languor or flagging health. But raw meat is better than iron, cream or fresh milk than cod-liver oil. The diet of a rickety child should be carefully examined to ascertain whether it contains a due proportion of fat, proteid, and salts. A sufficiently close estimate can be made with ease, since the composition of milk and of all foods used for children is accurately known. It will be found that it either is or has been defective, and it should be at once placed at the full standard, so that the amount of animal fat especially is equal to at least one-fourth of the total solids, proteid about one-third, the carbohydrates a little over one-third, the salts about one-tenth; and for a little infant these should be diluted to about the percentage which obtains in human milk. It is not enough to supply fat alone if proteid and salts are likewise deficient. These proportions can often be increased with advantage, care being taken not to overtax the child's digestive powers. A correct diet, with a full amount of the essential elements in digestible form, will cure rickets without medicine; but if cream or good milk cannot be obtained, or does not agree, cod-liver oil may be sub-

stituted. Iron is a most useful adjunct in many cases, and the salts of lime may be added in the form of lacto-phosphate. With these sunlight, fresh air, warm clothing, are potent aids, which should not be undervalued; but an anti-rachitic diet is essential, and without it other hygienic measures are comparatively powerless for good. (Dr. W. B. Cheadle, British Med. Journal, Nov. 24, p. 1148.)

STERILIZED HOT WATER.—Its Use in Surgical Operations. Of the necessity for great caution in the use of powerful germicides with children in operations, such as excisions at the hip, which require considerable expenditure of time for their satisfactory completion, I am convinced by a considerable experience. For this reason I have come to rely more and more upon the *aseptic*, and less upon the antiseptic, treatment of the wounded surfaces themselves. In past days, when the spray was continuously used during prolonged excisions, and the wound was vigorously syringed out with strong carbolic solutions, severe shock and carbolic intoxication was frequently the result. And though no death has followed upon even extensive excisions of the hip in my own cases, I have often felt very anxious about them on this account, many deaths having been recorded from these causes by other observers. This anxiety, together with a full realisation of the fact that in dealing with tubercular disease which has been kept quiet and has not yet burst through the skin, we are not attacking a truly suppurative process, has led me to give up the spray altogether, and trust to vigorous flushing of the wound with *sterilised hot water*, reserving the use of germicides for a final short mopping of the field of operation, just before closing it by suture. At the same time, far greater care has been bestowed upon the antiseptic scouring of everything which could in any way come into contact with the wound from without. But the great difficulty of *thoroughly* ridding the wound of all tubercular *débris* without syringing with large quantities of germicide solutions has been fully recognised, and since last June I have been employing this sterilised hot water for this purpose. This can be used in any amount, and at high pressure, with entire safety. And not only this, but when used at a high temperature it in itself has a tendency to prevent shock, both by its warmth and by its arresting hemorrhage, a matter of the greatest importance in the case of debilitated children.

If an abscess is opened up before the joint is reached, its contents can be thoroughly flushed out with sterilised hot water, at a temperature of between 105° and 110°, before anything further is done. For this purpose I have had a large three-gallon can made, which has three taps below, to each of which six or eight feet of india-rubber tubing is attached. This can is placed some feet above the operating table, so as to have a considerable pressure of water. Each of the rubber tubes terminates in the flushing-gouge I have designed for the purpose (described and figured at p. 253). (Mr. Arthur E. Barker, p. 252; and British Medical Journal, Jan. 19, p. 122.)

AFFECTIONS OF THE SKIN, ETC.

ACNE.—Lassar's and Oesterreicher's Treatment of.

Dr. Isaac, before the Berlin Medical Society (*München Med. Wochens*) related the method of treatment of acne at the clinic of Lassar. The following ointment is applied to the affected parts with a spatula or stiff brush, remaining for a half hour or an hour: ℞. Beta-naphthol 10 parts; sulphur præcip. 50 parts; sapo virid., vaselin. flav. āā 20 parts. M. On the following day, irritation and desquamation are apparent, which are completed at the end of a week. Slight irritation, which occurs at times, is relieved by the use of a drying powder. Oesterreicher has proposed a modification of this ointment which is particularly useful in obstinate cases. It consists in the addition of ten per cent. of camphor and a reduction in the amount of sapo viridis and vaseline to five per cent. This ointment should remain but a quarter of an hour. Isaac yet recommends a paste of resorcin: ℞. Resorcin, 2.5 to 5 parts; zinc. oxid., amyli, āā 5 parts; vaselin. flav. 12.5 parts. M. This paste may remain during the day and night, and on the following day is removed with cotton or oil. In about twenty patients thus treated no irritation occurred. The cure is speedy, occurring often in three to five days. (*Médicin. Chirurg. Rondeshau;* Philadelphia Medical News, Nov. 10, p. 531.)

ALOPECIA AREATA.—(Dr. H. Leloir, *Bull. de l'Acad. de Med.* 1888.) For several years past Dr. Leloir has had under observation 142 cases of alopecia areata. In 50 of these the most thorough examination, clinically and microscopically, failed to show the slightest evidence of any predisposing or exciting cause for the disease. In 36 cases the patients were of markedly nervous temperament, and various nervous symptoms had preceded the appearance of the bald patches. In a few of the latter cases he examined, histologically, the peripheral and cutaneous nerves taken from the patches; in one case all the signs of a degenerative atrophic neuritis were found; in another apparently similar case the cutaneous nerves showed no change. In 21 cases there was sufficient basis for the belief in the contagiousness of the disease. His examinations for parasites were practically negative. In one instance, in the corium, were seen small, granule-like bodies, which could be mistaken for the microccoci described by Robinson as the cause of the disease, but they proved to be the so-called "mast-cells." Numerous inoculations of lower animals were also without result. The author believes, evidently, in the existence of at least two varieties of alopecia areata, one contagious (parasitic) and the other tropho-neurotic, but confesses that as yet there are no known clinical or anatomo-pathological characters which would serve to differentiate. (American Journal of Medical Science, Feb., p. 208.)

Alopecia Areata.—(Dr. O. Lassar, *Therap. Ztsch., Dec.* 1888.) Lassar recommends for alopecia areata the following treatment: For the first six or eight weeks an experienced hand should thoroughly soap the scalp for ten minutes daily, using for this a strong tar soap. A good lather having been formed, it should be removed with an irrigator, using first lukewarm and then cold water. The cold douching will, after several repetitions, harden the scalp somewhat and prevent catching cold. After the scalp has been thoroughly dried the following lotion should be applied: ℞. Solution of bichloride of mercury 8 grs. to 5 oz.; glycerin, cologne water, āā ʒij ℥ v. Then the scalp should be rubbed dry with alcohol, ninety per cent., to which one-half per cent. of naphthol has been added. The scalp now being freed from any fat whatsoever, the following is applied: ℞. Salicylic acid 30 grains; tincture of benzoin 45 grains; neat's foot oil ʒiij ℥ ij. M. This treatment carried out daily for some weeks will be followed with good results. Dandruff and itching will disappear. Hairs which are stiff and dry, become flexible and oily, and where no hair was, hundreds of small hairs will make their appearance. Of course, this only holds good when the hair growth is not destroyed. —In very *obstinate cases* the following is worthy of trial: ℞. Carbolic acid 15 grains; sublimed sulphur 75 grains; fat from a horse's neck ʒiss. M.—The author relies very much upon *pilocarpin*, which he prescribes either in the form of an alcoholic solution or pomade: ℞. Muriate of pilocarpin 30 grs.; vaseline ℥ v; lanolin ʒiiss; oil of lavender 25 drops. M.—That the addition of *balsam of Peru* to hair pomades takes the place of an antiparasite is well known, and the following would make an efficient though somewhat expensive pomade: ℞. Muriate of pilocarpin 30 grains; muriate of quinine 60 grs.; precipitated sulphur ℥ iiss; balsam of Peru ℥ v; ox marrow ʒiij. Before applying the pomade the scalp should be thoroughly washed with soap and water and allowed to dry; then the ointment should be applied, but it should not be left on too long, before being again removed with soap and reapplied.—Tar in the form of *tar baths* is also an excellent remedy as well an antiparasite.—(Medical News, Feb. 2, p. 125.)

Alopecia Areata.—The Local Treatment of.—(*Dr. L. D. Bulkley.*) Locally, the whole treatment is summed up in the single idea of stimulation of the diseased patches. While parasiticides are not actually called for by any local parasite present, experience has shown that many of the remedies used for this purpose are also of benefit in alopecia areata. Bichloride of mercury, in a strength to moderately excite the skin, is frequently the best application; but my preference is for veratria in ointment, of a strength of five to ten or more grains to the ounce. Croton-oil, strong carbolic applications, acetum cantharidis, capsicum, and other stimulating applications may also be used with advantage. (Med. Record, March 2.)

CALLOSITIES, CORNS, WARTS, &c.—Treatment of.

In the *Münch. Med. Wochenschrift*, Roesen describes his method for the successful treatment of warts, corns, and other callosities. The growth or patch is moistened with an antiseptic solution, and then thickly covered with salicylic acid. Moist borated lint, in several layers, is placed over this, and the whole covered with gutta-percha tissue and bandaged. This is allowed to remain undisturbed for five days, at the end of which time the dressing is removed, and the thickened epidermis is usually found shrunken and loosened from the underlying parts. In callosities of high grade it may be necessary to repeat the treatment. The writer states that he has never seen a caustic effect from the application. (American Journal, Feb., p. 208.)

CORNS OR CALLOSITIES.—To remove from the Sole.

Unna (*Monatshefte fur Prak. Derm.*) observes that the treatment of subplantar corns is very much facilitated by a judicious combination of salicylic plaster and glycerine jelly. A ring of glycerine jelly about the diameter of the wart is painted round it with a fine but stiff bristle paint brush. When this ring of jelly has quite set and become dry, a circular piece of the strongest salicylic plaster muslin (salicylic 40, creasote 40) is cut sufficiently large to fit within the ring of jelly; jelly is now painted over the ring of jelly already made, and the piece of plaster itself; and to make assurance doubly sure, a third coat of jelly should be painted widely over all; and when these have become almost dry, a layer of cotton wool is to be placed and pressed on. The larger the surface covered with the jelly the less the local pressure on the corn. In the case of feet which perspire much, and particularly in hot weather, a single turn of a soft muslin bandage should be folded round the affected part of the foot, before the jelly has become quite dry, covered with a coating of jelly and then with wool, or the coating of jelly itself, and the neighbouring part of the foot is painted with flexible collodion. In this way one can, even in the heat of summer and in those whose feet sweat freely, keep the plaster in position. The dressing is changed when it becomes spontaneously loose, at the oftenest one or twice a week, the horny layer acted on by the salicylic acid is removed, and a new dressing applied; and this had better be continued for some time after the wart has been cured. (Dr. Jamieson's Periscope, Edinburgh Med. Journal, Dec., p. 567.)

CRATERIFORM ULCER OF THE FACE.—Description of.

At the Pathological Society, on Feb. 19th, 1889, Mr. Hutchinson brought forward a series of drawings and microscopic specimens in illustration of a peculiar form of Acute Epithelial Cancer of the Face, to which he gave the name of "crateriform ulcer." The cases were, he said, in their clinical features very peculiar, and had not received much attention from authors. The disease was entirely different in its clinical features from the ordinary forms of rodent

ulcer, the common type of epithelial cancer of the face. The latter developed slowly, was attended by but a small amount of growth, and by a creeping ulceration. In the crateriform ulcer the growth was very rapid and large in amount. A bossy mass, considerably ulcerated and shaped usually like a bee-hive, was developed in the course of a few months, and in the centre of this softening took place, and a cavity like a crater was developed. Mr. Hutchinson could not state with precision anything about the next stage, since he had never allowed any of his cases to develop further than that described. But in remarkable contrast, in relation to rodent ulcer and most other forms of epithelial cancer, there seemed to be little or no tendency to local recurrence. In no single instance had he known the disease recur in the part from which it had been excised, nor had he observed gland disease in any. In one remarkable case in which he had excised a large growth of this kind from the eyebrow of an old woman, the part affected remained sound, but a growth of exactly similar characters developed a year or two afterwards in the opposite eyebrow. The parts had been examined by various microscopists, and all had reported that they contained elements characteristic of epithelial cancer. Sections from the last case were before the meeting. All the patients had been past middle age, and most of them were senile. The portraits exhibited were, first, one showing the disease on the cheek of an old man; the second, one on the ala nasi of a man aged forty; third, one on the side of the nose close to the inner canthus of an old woman; and, fourthly, one from which the sections were shown on the cheek of an elderly gentleman. He regretted that he could not produce the one to which he had referred, showing the growth in the eyebrow of an old woman; for the portrait, a very characteristic one, had been lost. He did not know whether he ought to say he was sorry that he could not give any details as to the later stages of the disease; for all the cases which he had observed had remained well after operation. This fact was the more remarkable considering the great rapidity with which the disease developed. It was also one which rendered it very desirable that the characters of the disease should be generally recognised, since the age of the patient and the formidable appearance of the growth might otherwise dissuade from operation. He concluded by saying that he had not met with similar growths on any other part of the body except the face. He was inclined to suspect that these tumours owed their peculiarity to their beginning, not in healthy skin, but in moles. In two or three of his cases this was the patient's belief. (Lancet, Feb. 23, p. 379.)

ECZEMA.—(Dr. Veiel, *Corr. Blatt de Württ. ärztl. Landesver.*)

Dr. Veiel, of Cannstatt, writes upon this subject as follows:—When treating an eczema, distinction must be made between the acute and chronic form. In the acute form no internal treatment

is required, while in the chronic form, arsenic internally, and proper remedial measures externally, are essential. When chlorosis is present, one should administer iron one hour before meals, and arsenic one hour after the same. Scrofulous eczema of children is best treated with cod-liver oil and and an appropriate diet combined, if the itching is very annoying, with the internal administration of chloral and bromide of potassium. In the acute variety, anything that might possibly irritate the skin must be avoided. Children who cannot very well do without their daily bath, should have some slimy substance added to the same. Soap in any form or shape must be avoided. To allay the burning and itching of an *acute and dry eczema*, Unna recommends the following: ℞. Oxide of zinc, gelatine, āā ℥iv; glycerine, ℥viss; water, ℨiss. M. Heat for a few moments, and apply with a camel's-hair brush. In *moist eczema*, the affected parts should be thoroughly washed once daily, then dried, and some flour or starch applied. In cases in which this proves of no avail, the author makes use of a pillow filled with powdered starch; the effect is a cooling one, but requires frequent changing. Where the itching is severe, and the starch alone does not give relief, the parts should be powdered with starch to which two per cent. of camphor has been added. Should this still not alleviate the irritation, the parts should be washed with the following: ℞. Solution of acetate of aluminum, ℥ijss; water, ℨiij; borax, 55 grains; salicylic acid, 5 grains; water, ℨvss; glycerine, ℨj. M. In the wide-spreading and moist eczema, salves and pastes are of service. Thus, if the eruption has become dry and squamous, a five per cent. tannin salve should be applied. In *chronic eczemas* the crusts and scales should be detached by bathing, or by applying soft-soap or oil; the addition of one to two per cent. of ichthyol to any of the foregoing will greatly assist their action. If, in spite of this, the scaling should still continue, Lassar's paste, or tar in alcohol, should be applied. ℞. Liquid tar, 1 part; alcohol, 3 parts. This formula is not to be applied to any hairy portion of the body, as it might induce a general sycosis. Should even this last-named remedy prove ineffective, then pyrogallic acid and chrysarobin (in a two to ten per cent. salve) should be tried. (Medical News, Feb. 9.)

Eczema.—Definition of Local Eczemas.

At the Harveian Society, on January 31, 1889, Mr. Malcolm Morris opened his paper on this subject with a definition of the term "local" as opposed to "constitutional." He maintained that there was a widespread tendency in the profession to ascribe eczemas to which no obvious local cause could be assigned to the operation of the first constitutional disorder which might be found in the patient. Mr. Morris was of opinion that that group of eczemas, the cause of which could be referred to purely local action in the skin, was gradually enlarging, while, on the contrary, the constitutional group was being equally diminished. He claimed for

bacteriology a very large share of the influence which had helped to bring this change about. He then proceeded to sketch the clinical appearances and features of eczema seborrhoicum. He said it was an inflammation of the sweat glands, and that it chose preferably those parts of the skin where these glands were most numerous and of largest size. There were three forms which it usually assumed: (1) the scaly, as on the scalp; (2) the crusty, as on the sternum and body generally; (3) the moist or weeping form, as behind the ears, the temples, and intertrigo regions generally. Mr. Morris then gave the differential diagnosis between eczema seborrhoicum and psoriasis and herpes tonsurans, and sketched the clinical features of eczema folliculorum. The treatment of these two eczemas was of a purely local kind, and consisted in the application of antiseptic ointments, the most valuable ingredient of which was sulphur.—Dr. Stephen Mackenzie agreed with the treatment suggested, but questioned the reasons for its adoption. Undoubtedly many eczemas were entirely local in origin. (Lancet, Feb. 23, p. 382.)

Eczema of Anus and Genitals.—(LUSTGARTEN, *Le Progrès Médical.*) Lustgarten advises hot sitz baths, rendered very soapy, and, subsequently, the application of the following pomade. ℞. Oleate of cocaine 1 part; olive oil 2 parts; lanolin 10 parts. M. Apply twice daily to affected parts. (Medical News, Oct. 20, p. 447.)

Eczema of the Hands.—Pomade for.—(*L' Union Médicale.*) ℞. Resorcin 15 to 30 grs.; yellow vaseline 1 oz. This pomade to be used in eczema of the hands; it calms the itch and hastens the infiltration of the skin. (Medical News, Dec. 15, p. 676.)

Eczema.—Boeck's Treatment of Infantile Eczema. In those obstinate cases of eczema which occur so frequently in children during the second half of the first year of their lives, and affect particularly the face and extensor aspects of the extremities, should simple means such as Lassar's paste not cure, Boeck recommends compresses of a weak solution of nitrate of silver (1 to 500), alternating with an ointment. The compresses of the nitrate are usually applied covered with gutta-percha paper for two or three hours night and morning, and a soothing ointment during the rest of the day and at night. The unguentum vaselini plumbicum suits very well. This treatment can also be used with advantage in the moist eczema of adults. (Edinburgh Med. Journal, Oct., p. 380.)

EXCESSIVE SWEATING.—Use of Chromic Acid in. A circular has been sent to all the Prussian Army medical officers, advocating chromic acid as an economical and efficient means of checking excessive perspiration. In hyperhydrosis of the feet the application of a ten per cent. solution, repeated every three or six

weeks, is sufficient to prevent any inconvenience from this source. (Medical Press, Oct. 24, 1888.)

ERYSIPELAS.—A Simple Method of Treatment.

Speaking of erysipelas in the *Algemeine Wiener Med. Zeitung*, Nussbaum expresses himself thus: "I have had the pleasure recently to obtain a rapid cure in many cases of erysipelas by a very simple method which does not present any danger nor occasion any pain. This is not the case with injections of phenic acid, which are almost always cruel on account of the suffering. The erysipelatous parts, previously rubbed with a pomade of lanoline and ichthyol (equal parts), are enveloped in salicylated cotton. It will be found, the day after this application, that not only has the erysipelas not advanced, but that there has been a notable amelioration in all the morbid symptoms. The roughness, the redness, and the pain have very much diminished—in a word, all the phenomena of irritation have disappeared as if by enchantment, and do not return. It is hardly ever necessary to continue the application for more than three days." (Montreal Med. Journal, Oct., p. 284.)

FISSURES OF THE TONGUE.—Use of Papayotin in.

Dr. Schwimmer has used papayotin (which is also known as papain) successfully in cases which had resisted the action of chromic acid, iodoform, and nitrate of silver. He employed the following formula: ℞. Papayotin 1 to 2 parts; glycerin, water, āā 10 parts. M. Five or six applications should be made daily, after drying the fissures. (Medical News, Feb. 2, p. 126.)

FURUNCLES.—An Ointment for.—(*L'Union Médicale.*)

℞. Red precipitate 1½ grs.; lanoline or vaseline ℥ss. M. If a stye is to be treated, apply the ointment over the affected part and rub gently. In persons in whom the skin is soft and irritable, the amount of red precipitate can be reduced to ¾ or ½ a grain. A single application of three or four minutes' duration will suffice to arrest the progress of small furuncles; and even where the furuncles are large, several applications made the same day will effect a cure. This ointment is also recommended for acne. (Medical News, Dec. 15, p. 677.)

GROUPED COMEDONES.—Stimulating Applications.

The importance of this affection is entirely in its disfiguring effects. Ordinary comedones are, as many afflicted young persons are too ready to admit, by no means improving to the appearance, but grouped comedones developed to such an extent as those shown in these figures become a decided deformity, giving rise to no little worry and unhappiness to the person who is the subject of them. The extent to which this worry is developed depends of course a good deal upon the individual, but the most indifferent to personal appearance cannot help being rendered more or less unhappy

by being compelled to constantly present the appearance of a daubed or unwashed face. Although a careful examination of all the latest works on dermatology has failed to discover a clear or well-marked description of this curious affection, I by no means consider that it can be very rare, and I shall be surprised if the publication of this short paper, and more particularly of the figures which illustrate it, does not lead to notices of similar cases. Probably it occurs amongst many persons who have not considered it necessary to consult a medical man regarding it. In two of the three cases which I have related I extracted a number of comedones and subjected the sebaceous plug to careful microscopical examination, but failed to find that it differed in any way from the similar plug which can be squeezed out in any ordinary case of comedo. The treatment of this affection consists in stimulating applications to the skin. The circulation over the affected parts should be roused by friction with soft soap and the application of sulphur ointment. Friction with soft soap once in twenty-four to forty-eight hours, according to the susceptibility of the skin of the individual, and rubbing in at bedtime of the sulphur ointment, will, if persevered in sufficiently long, probably be found to effect a cure. When too much congestion or inflammation of the skin is produced, the treatment should be intermitted, and a soothing application of zinc ointment made for two or three days. Of course, other means might be taken which would in some cases be more convenient, so long as the end to be attained is kept in view—namely, that of stimulating or rousing the skin to more tone and to more active circulation. (Dr. George Thin, London, Lancet, Oct. 12.)

HYDROXYLAMIN.—Its Employment in Skin Diseases.

Dr. Eichoff, of the Municipal Hospital, Elberfeld, has found an admirable substitute for pyrogallic acid, chrysarobin, and other powerful reducing agents used in external applications for skin diseases in hydroxylamin, which is, chemically speaking, an ammonia in which one of the atoms of H is replaced by HO. The most suitable compound for dermatological use is the chloride, the formula of which is $NH_2OH.Cl$. This occurs in colourless, strongly hygroscopic crystals, which are readily soluble in water, glycerine, or spirit, the solution showing an acid reaction. When introduced into the blood, hydroxylamin forms methæmoglobin, the blood rapidly becoming of a deep-brown colour. In large doses—that is to say, 0·01 gramme per kilogramme of body weight—it produces hæmaturia in consequence of the destruction of the red corpuscles. It also acts on the nervous centres, producing narcosis. The high reducing power possessed by hydroxylamin renders it a powerful poison to low organic forms, and on this account it is to be very strongly recommended in dermatology. The preparation used by Dr. Eichoff is the hydrochlorate dissolved in a mixture of equal

parts of glycerine and spirits of wine in the proportion of 1 per 1,000. This is applied with a brush to the affected parts of the skin, which must first be carefully washed with soap three to five times a day. In this way he has treated five cases of lupus, five of ringworm, and one of parasitic sycosis, with excellent results. These were specially remarkable in two cases of very severe lupus. Dr. Eichoff is hopeful that this remedy, which may sometimes perhaps be applied in the form of subcutaneous injections, may be found useful in psoriasis, parasitic eczema, and even in lepra and syphilis. He, however, warns those who propose to try it that it is a very powerful irritant, and that even for outward application a strength of 1 per 1,000 is quite enough. (Lancet, Feb. 9, p. 287.)

IODINE ERUPTIONS.—A Pure and Simple Dermatitis.

My studies of the cutaneous manifestations of iodic intoxication have convinced me that iodic eruptions are most correctly and simply divided into two classes—the hemorrhagic and the dermal inflammatory. The petechial or purpuric eruptions are undoubtedly the result of some change induced by the drug in the small vessels, and perhaps in the constitution of the blood. The essential lesion in the majority of cases of iodic eruption is dermatitis pure and simple. The sebaceous follicles may become inflamed and form minute abscess-cavities or pustules, but this prominently striking feature is only secondary to the dermatitis of papular, tubercular, or diffuse patchy form which underlies it. The tendency of iodic eruptions to present vegetating and fungating features has led observers, in my judgment incorrectly, to make new and separate forms of these affections, whereas they are simply evidences of the extreme development of the inflammatory process, due in some cases to a highly pronounced idiosyncrasy, or in others to supersaturation of the system with the drug. During the past two years I have had the rather unusual experience of seeing three well-marked cases of bullous eruption of iodic origin, in which, after rupture of the lesion, surfaces varying in appearance between the slightly warty and the vegetating were left. A careful study of these cases, however, convinced me that the essential morbid process was the dermatitis, that the bullous element was, owing to tissue peculiarities, the outcome of that inflammation, and that the subsequent warty surfaces were due to its intensity and persistency. All cases of bullous iodic eruption show this condition of thickening of the skin in marked contrast to pemphigus. Those not uncommon cases in which papules, papulo-pustules, tubercles, tuberculo-pustules, diffuse inflammatory patches (particularly about the face and often of fungating appearance), and subcutaneous nodular infiltrations are found co-existing can, in my judgment, only be explained on the ground of dermatitis, all the modifying phenomena being secondary to it. (Dr. R. W. Taylor, New York, N.Y. Medical Journal, Nov. 3, p. 478.)

ITCH.—Treatment with Naphthol.—(*Revue de Therap.*)
Dr. Kaposi recommends the following formula:—℞. Naphthol, gr. 1; green soap, ʒvj; prepared chalk, ʒjss; lard, ʒj ʒij. M. The substitution of lanoline for lard will admit of deeper penetration of the ointment. (Medical News, Jan. 19, p. 74.)

LANOLIN AND BORIC ACID in Skin Diseases of Children.
The combination of lanolin and boric acid as an ointment is said to have a most gratifying effect in certain skin diseases in children, especially eczema of the head and face, intertrigo, and seborrhœa. In the case of eczema, for example, with raw patches on the cheeks and yellowish crusts on the head, the surface is first cleansed in the usual way, and then dusted over with finely powdered boric acid. On the following day this washing and dusting is repeated; already the inflammation will seem lessened. The process is then repeated twice daily, the washing being always done gently, until the skin is in a condition to bear an ointment containing 30 per cent. of lanolin and 8 per cent. of boric acid. In the squamous form of eczema with considerable induration, olive oil is well rubbed in and then removed with Castile soap, and an ointment containing ½ or 1 per cent. of salicylic acid with 30 per cent. of lanolin is energetically applied according to the degree of induration. This washing and application are repeated twice daily. The strikingly beneficial action of this course of treatment, which is less painful than the use of strong alkalies or oil of cade, is ascribed to the penetrating properties of lanolin, which thus facilitates the entrance of salicylic acid into the deeper layer of the epidermis. Dr. Russell Sturgis, who advocates the above treatment, also finds lanolin a reliable means of alleviating the irritation due to chronic urticaria. (British Med. Journal, Oct. 20, p. 896.)

LEUKOPLAKIA BUCCALIS.—(*Dr. Unna, Monats. für Prakt. Derm.*)
Unna thinks with Schwimmer that numerous examples occur in which, apart from any previous constitutional syphilis, white patches form on the mucous membrane of the lips, cheek, and tongue, which feel hard, are painless, and are either on a level with the surface, or may project above it. Syphilis, however, whether cured or still persisting, most markedly increases the tendency to the production of such patches; and smoking has the greatest effect, in persons so predisposed, in developing them, which accounts for the rarity of the affection in women. A question of practicable value is the curability of leukoplakia by anti-syphilitic remedies. Even where syphilis has preceded, this cannot be regarded as a true specific ailment. Syphilis predisposes the mucous membrane of the mouth, as it does other tissues, to certain new disorders, which, however, always require a fresh etiological impetus to call them forth. Tabes affords the best example of such post-syphilitic affections. Just as the nervous system needs certain excitants, as a chill, over-

exertion, and the like, so does the mucous membrane of the mouth demand local irritants, as bad teeth, insufficient cleanliness, but, particularly, the immoderate use of tobacco. With this view the fact agrees, that only a local, well-directed, and persevering treatment is able to ameliorate this obstinate complaint, or in some very favourable instances to remove it. Unna can recall only one example of extensive leukoplakia of the tongue, in which the use of chrome solution—regarded by some as an anti-syphilitic remedy—with entire cessation of smoking, led to almost entire cure. From his personal experience, he recommends the following treatment:—He regards the concentrated solution of chromic acid in water as the best caustic. When energetic treatment is desired, superficial cauterization with Paquelin is recommended, with subsequent application to the peeling surfaces of a weak solution of chromic acid or of nitrate of silver. Iodoform, corrosive sublimate, and nitrate of silver alone, have given him no satisfactory results. He is of opinion that leukoplakia linguæ does indeed predispose to cancer, but only in those severe and neglected cases in which extensive fissuring has gradually occurred. He does not believe in the direct transformation of leukoplakia into cancer, but only in a relationship of such a kind, that the cracks in the mucous membrane, constantly irritated by the movements of the tongue, by the secretions of the mouth, and by food, and in themselves painful, serve as starting points for cancer. He considers the due care of leukoplakia as essential to the prophylaxis of cancer of the tongue. (Dr. Jamieson's Periscope, Edinburgh Med. Journal, Dec., p. 569.)

LUPUS.—Treatment.

As an auxiliary to the ordinary methods of treating lupus, or as an independent method, Unna advises (*Unna Monats. Prak. Dermalogie.*) the following lotion: ℞. Corrosive sublimate, 1; carbolic acid or creasote, 4; alcohol, 20. The nodules are attacked in series of tens, beginning with those at the edge of the patch. They are first punctured with an acne lance, and a minute shred of absorbent cotton moistened with the lotion is inserted by means of a sharpened stick; the cotton rotated and allowed to remain for ten or fifteen minutes. In a few days the punctures and lupus deposits so treated have almost disappeared, and other nodules may be then similarly attacked. This method, the writer believes, has many advantages over the somewhat similar plan of treatment by means of the nitrate of silver stick. (American Journal, Oct., p, 423.)

NASAL MUCOUS MEMBRANE (Hypertrophic Conditions of).—Treatment by Chromic Acid.

The following slight modification of Bosworth's technique is used by the writer in binding down hypertrophies for this and other purposes. A small cotton tuft saturated, but not dripping, with a five per cent. solution of cocaine muriate, is placed in contact with

the area to be operated upon, and allowed to remain for from four to eight minutes; tight contraction of the tissues is the result. A recently made, fully saturated solution of chemically pure chromic acid is then to be used in the following manner: a light, steel cotton-carrier, such as is used in ear work, is to be tightly bound at its extremity with a tuft of cotton, which when wound on the probe must not be above two millimetres in diameter, or more than one centimetre long. This pad being saturated with the acid, and carefully mopped with dry cotton until dripping is impossible, is to be carried, under full inspection, to the point of greatest hypertrophy (decided upon *before* the cocaine was applied), and held firmly in contact with the mucous membrane for at least twenty seconds. Great condensation of the turbinated tissue at the point of contact results, together with a slough of varying, but always shallow, depth; the ultimate and speedy effect being to bind down firmly and permanently the offending mass of tissue. A strong solution of bicarbonate of sodium should always be at hand, and if the acid show any tendency to spread, it must be liberally mopped over the seat of the eschar. (Dr. R. W. Seiss, Philadelphia Polyclinic, Med. News, Jan. 5, p. 11.)

PASTES FOR ECZEMA, &c.—(Lassar, Unna, Gruendler.) It is admitted on all hands that, among the numerous advances which have been made in the therapeutics of skin diseases during the last ten years, the introduction of pastes, especially as regards the treatment of eczema, constitutes one of the chief. Lassar's well-known formula, consisting of two parts of vaseline and one each of starch and oxide of zinc, with 2 per cent. of salicylic acid, is not, however, the sole though the best known, for Unna has simplified the composition by showing that an excellent paste can be compounded by adding a small proportion of silica to ordinary oxide of zinc ointment. Pastes have the advantage over ointments in two directions. One, that while the treatment by fatty substances is maintained, the secretions and excretions of the diseased skin are absorbed. A purely fatty vehicle dams up the watery secretion, while the oily, if not checked, is at least not taken up. Another is that pastes, when applied, leave a firm, powdery residuum on the surface, much pleasanter than an oily layer, and which, in addition, fixes some of the remedy, instead of permitting it to be easily rubbed off like an ointment. Dr. Gruendler, of Hamburg, has experimented on the absorptive power of various indifferent substances, innocuous powders, which may be used to form pastes. Of those tried, carbonate of magnesia possessed the highest capacity for absorption, yet, from being deficient in body, it does not make a good paste. He recommends it, however, as an addition to pastes otherwise compounded, to increase their absorptive capacity, in the proportion of from 10 to 20 per cent., or alone, or with oxide of zinc as a dusting powder. The addition of one of the silicious

earths, in the proportion of about 10 per cent. to ointments, converts them into useful pastes. Should it be the object of the paste to form such a dry covering on the skin that the fatty ingredient and combined drugs are to be taken up by the epidermis, the fatty material must be one of those most readily absorbed. In general, then, animal fats, lard, suet, lanolin; next to these, vegetable fats; and last, those substances which resemble fats, as vaseline and glycerine. (Dr. Jamieson's Periscope, Edinburgh Medical Jour., Feb., p. 761.)

PEDICULI PUBIS.—Application of Ether Spray in.

In the *Monats. für prakt. Dermatologie* it is proposed to destroy pediculi pubis by a single application of ether in spray. This procedure is less injurious to the skin than the application of chloroform, which likewise accomplishes the same object. (Medical News, Oct. 27, p. 473.)

PEMPHIGUS PRURIGINOSUS.—Cured by Carbolised Water.

The notes of a case of pemphigus pruriginosus treated successfully by applications of carbolised water are given in the *Revue Médicale*, by Secretan. The patient, an adult male, exhibited upon all parts variously sized blebs in the several stages of development. The lesions covered, in all, more than half the surface. The eruption appeared in outbreaks, accompanied by elevation of temperature. As soon as one crop had about disappeared, a recurrence would take place. The patient was greatly enfeebled, both by the direct draining effect of the disease, as well as by the intense and persistent itching. The ordinary therapeutic methods were tried in vain, and, finally, as a palliative to the pruritus, compresses wet with carbolised water (one per cent.) were applied, with almost instant relief to the itching, and with gradual improvement in all the cutaneous symptoms. The new blebs were abortive, and in four or five weeks after these applications had been ordered, the patient was discharged from the hospital cured. In the beginning of this treatment, especially when there were numerous excoriations, it was necessary to discontinue the applications, for hours or days, by reason of evidences of toxic influence. In all, the case was under treatment, from admission to discharge, from the middle of January to the last of March. The disease had made its appearance early in the preceding December. The author suggests that the therapeutic result of the carbolic acid applications agrees with the microbe theory of the disease advanced by Gibier. (American Journal, Oct., p. 421.)

PEMPHIGUS VEGETANS (Neumann).—A Case of.

At the Royal Medical and Chirurgical Society, on March 12th, 1889, a case of Pemphigus Vegetans was placed on record by Dr. H. Radcliffe Crocker. He said that only two previous indubitable cases, and those under a different name, had been recorded in this

country, and only eleven others were known, all recorded by German observers. The case now related was a typical instance. A woman aged forty-three, unmarried, was first taken ill at the beginning of April, 1887, with stomatitis and great weakness. A few days later bullæ appeared on the abdomen, soon followed by others. Each bulla from the first, instead of healing, left an ulceration on its site, and in the axillæ and groins there was enormous papillary hypertrophy, producing frambœsiform masses, with a very offensive secretion. There was extensive denudation of the oral mucous membrane. The conjunctiva and vulva were also affected. Deglutition became more and more difficult, and, as fresh crops of bullæ kept on appearing, large raw areas were produced. The patient got gradually weaker, treatment producing no amelioration, except in removing the offensive odour, and she died on July 9th, the disease having lasted three months. A low form of pleuro-pneumonia was the only important visceral lesion. An analysis of this and thirteen other cases showed that the characteristic features of the disease were, that without any previous illness or known cause, pain on swallowing and soreness of the mouth was experienced, due to the formation of bullæ on the oral mucous membrane. In a few days or weeks, crops of bullæ, generally of the ordinary pemphigus type, appeared on the abdomen or elsewhere. These bullæ did not, as usual, dry up into a thin crust, but left superficial ulcerations at their site, which remained unhealed for a long time, and when they did heal, left deep-brown pigmentation. The ulcers were worst over points of pressure, such as the occiput, shoulders, sacrum, and hips. In the axillæ, groins, gluteal folds, and in the lower part of the abdomen —in short, in all the warm and moist situations—fungating papillary growths sprang up on the site of the ruptured bullæ, and might project from a quarter to half an inch above the surface, and secrete a very offensive muco-purulent fluid. Fresh crops of bullæ continued to develop; the mouth affection interfered with nutrition; the patient got progressively weaker, and died after a few weeks or months of exhaustion, or some intercurrent inflammation. Less common features were where the skin lesions preceded those of the mouth. In four instances there had been suppurative onychitis of all the fingers and toes, with shedding of the nails. In two cases there had been clonic convulsions and heightened reflexes. Ptyalism had been noted in three cases, and involvement of the conjunctiva and vulva had been generally noted. In spite of the most varied treatment, the disease had been uniformly fatal in all undoubted cases, though in one case recovery took place in the first attack; but the disease recurred some years later, with a fatal result. If seen early, the administration of opium in full doses, as employed by Mr. George Pollock and Mr. Hutchinson, was worthy of careful trial. (Lancet, March 16, p. 531.)

POST-ECZEMATOUS FURUNCULOSIS.—(UNNA, *Monats. Prak. Der.*) The development of furuncles along with or following eczema is, as Unna states, not uncommon, and the longer the eczema has lasted and the less antiseptic remedies have been employed, the greater the probability of furuncular lesions. To mitigate and to avoid this complication the incorporation of carbolic acid or thymol in the ointments used for the eczema is advised. The addition of a minute quantity of corrosive sublimate to oxide of zinc ointment, aided by the administration of calcium sulphide, may be considered, however, the most certain method to adopt in cases in which boil formation is likely to occur. (American Journal, Oct., p. 425.)

PRURITUS.—Application for.—(*Therap. Monats.*) To relieve the itching of hemorrhoidal affections, pruritus ani, pruritus senilis, etc., wash the part with lukewarm water and good soap; then rub in lanolin in the following combination: ℞. Lanolin puriss. 30 parts; vaselini, olei olivæ, āā 20 parts. When the itching about the anus is severe, cocaine may be added thus: ℞. Cocainæ hydrochlorat. $\frac{1}{10}$ to $\frac{1}{5}$ part; lanolin puriss. 30 parts; vaselini, olei olivæ āā 20 parts. The addition of ten per cent. of flowers of sulphur has proved useful. (Medical News, Oct. 20, p. 448.)

PRURITIC AFFECTIONS.—Employment of Menthol in. Menthol is recommended by Saalfeld, of Berlin, in the *Deutsche Med. Woch.* as exceedingly beneficial in cases of pruritus of various kinds. He prescribes it either as a wash or as a salve, the formulæ being: (1.) Menthol, 1·5—2·5 grammes (22—37 gr.); spirit vin. rect., 50·0 (℥ $1\frac{2}{3}$). And, (2.) Menthol 2·5 (37 gr.); ol. olivarum, 7·5—10 (℥ ii—℥ iii); lanolin ad 50·0 ($1\frac{2}{3}$ oz.). Both preparations have done him excellent service in urticaria, pruritus cutaneus, and pruritus senilis. A case of intolerable itching consecutive to otherwise successfully treated scabies was perfectly cured by applications of the following ointment:—Menthol, 2·5, 48 gr.; bals. Peruv., 5·0, 96 gr.; ungt. Wilson (ung. zn. benz.), lanolin, pur., āā ad 50·0; āā ad. 2 oz.; M. f. ungt. Menthol as a 10 to 15 per cent. ointment proved likewise very valuable in chronic eczema, even in quite inveterate cases. (Glasgow Med. Journal, Feb., p. 159.)

PSORIASIS.—Treatment.—(*Journal of Cutaneous Diseases*, 1888.) As a preliminary measure the scales must be removed, and for this purpose soapy lotions have been advised, also simple and alkaline baths, etc. In France the scales are made to fall by means of alternate baths of starch and vapour baths, followed at night by the application of caoutchouc. It must be noted that the whole body must not be covered at once, nor suddenly, but that it is more prudent to make partial impermeable coverings. Every psoriatic patient has not the means or time to resort to baths, whose effect is, by the way, not a rapid one. We therefore recommend as a simple

and speedily efficacious method, within the reach of all, the following ointment, to be used twice daily: ℞. Ammoniæ carbonatis, 10·0; lanolini 25·0; cerati galeni 50·0. This ointment does not produce any pain, is irritating, and causes the crust to disappear, leaving the surface smooth and free, giving an opportunity for other agents, which have a direct and real action upon the affection proper, to act with certainty. In spite of all new forms of treatment introduced from time to time for the cure of psoriasis (some of which have their special application for certain cases), Vidal believes that for the generality of cases we find in the oil of cade a superiority which forces us to come back to it again and again. By its use it would appear that recurrences are less frequent. The following formula is given: ℞. Amyli glycerolis 100·0; saponis mollis 5·0; olei cadini 100·0. This makes a soap much more easy of application than the oil of cade alone. It should be applied each night, and a flannel dress worn, which is only changed at long intervals. In the morning a bath with tar soap is to be taken, and, if desirable, the odour of the tarry preparation is removed with some perfume. (Dr. Jamieson's Periscope, Edinburgh Medical Journal, October, p. 379.)

RINGWORM OF THE SCALP.—The Treatment of.

The following important conclusions are appended to an account of some experimental researches concerning the Ringworm Fungus. Something may be learned from these experiments that may be useful to us in practice. We may gather, for example, that the action of soap and water on the scalp, unless prolonged to a much greater extent than is at all likely, will not destroy the power of growth of such spores as may happen to be living amongst the scales on the surface. Secondly, we now know with definite certainty, what was fairly well understood before on clinical grounds, that the action of simple fat is not sufficient to destroy the vitality of the spores. Although the scalp were smeared thickly with fat or vaseline, the vitality of all those spores that were lying in the epidermic scales or in the mouths of the follicles would remain uninjured, although I have little doubt that they would cease to grow until the fat had been removed. On the other hand, we learn that an ointment which contains a comparatively small proportion of the ordinary antiseptic preparations that are used in the treatment of ringworm is destructive to all the spores that come in contact with it if the contact is prolonged for a comparatively short time. If the scalp, for example, is smeared in a weak strength of sulphur ointment, there is no doubt that all the spores are destroyed except those that are deeper in the hair-follicle than the ointment can penetrate. The distinct antiparasitic effect of weak strengths of white precipitate and citrine ointments, notably of the latter, is also experimentally shown to be certain. But very interesting it is indeed to note the result of the plunging of ringworm hairs in croton

oil. Croton oil (as most readers who have given any attention to the literature of the subject are aware) has been greatly lauded in the treatment of ringworm. The method has not been generally adopted in France, where it was originally suggested, and I hardly think that the support which it has found in this country has led to its being much used. I have nothing to add to what I have expressed on this subject in my book on *Ringworm*. That it is a powerful, although not a certain, remedy in ringworm of the scalp is certain; but the inflammation that it produces and the impossibility of being certain that baldness will not follow its use are drawbacks which, in my opinion, are sufficient to prevent its being used at all by practitioners who are careful that neither the health of the patient nor the permanent vitality of the hairs of the scalp should be injured. However, the fact remains that in a certain number of cases ringworm of the scalp can be removed by croton oil. What, then, is the action of croton oil? Certainly not that of a parasiticide. Spores that have been soaked in croton oil grow luxuriantly as soon as they are placed in a proper medium. The curative effect of croton oil, then, must depend on the inflammation that it produces, and we are led back to the doctrine which I have maintained for a considerable number of years, that the remedies which cure ringworm of the scalp do so, not in virtue of their parasitic effect, but in virtue of the inflammation which they produce. It is the products of inflammation that cure ringworm of the scalp. The wise practitioner is he who chooses the methods suitable for each individual case—such methods as will produce a certain amount of congestion and no more, a congestion that, if steadily maintained for a sufficient length of time, will gradually lead to the destruction of the vitality of the spores, but which is never allowed to reach a point that will either injure the skin superficially or destroy the hair-follicle. I may be pardoned for reiterating the expression of my opinion that there is no fixed formula to produce these results. The practitioner must, in accordance with the peculiarities of each individual case, select both his remedies and the strength of his remedies, and, above all things, take care that, whether the disease lasts a longer or shorter time, neither the health nor the scalp of his patient shall be allowed to suffer. (Dr. George Thin, London, British Medical Journal, Feb. 23, p. 399.)

RINGWORM.—A Prophylactic Pomade for.

It is accepted that a dry state of the scalp is more favourable than a moist one for the spread or development of the parasitic fungus, and that grease also is prejudicial to its growth. Keeping these points in view, I employed various agents, but came eventually to the conclusion that the following application was very effective. ℞. Ointment of boracic acid and ointment of eucalyptus, of each ℥ij; oil of cloves, ℥ ss; and oil of cocoa nut, to make ℥vi. This con-

stitutes really a very elegant pomade—call it prophylactic pomade if you will—one of the very best for general purposes, as well as this special that I know of. If, however, ringworm makes its appearance in a family, I recommend its use to other parts of the head of the patient, and to all the other children in the family, and so far with very satisfactory results. To test further its efficacy I purposely placed infected hairs on the heads of three children, and then did not use the pomade until the next day. No infection occurred in any of the cases. (Dr. A. T. Harrison, of Bristol, British Medical Journal, March 2, p. 466.)

Ringworm.—A Parasiticide Application for.

All the investigations I have made convince me that I cannot supersede the use of the caustic alkalies, although at the same time there must be included a parasiticide, so my ointment I make as follows: Caustic potash, gr. ix; carbolic acid, gr. xxiv; lanolin and oil of cocoa-nut, of each ʒss. The ingredients are to be well rubbed together, and, if desired, a little oil of cloves, lavender, or rosemary may be added according to circumstances. A small portion of the ointment to be rubbed on the affected parts every night and morning. In this combination the caustic potash acts upon and softens the hair-matter, and in this way allows the carbolic acid to have free access to the parasitic fungus and its hosts of conidia. I do not find it necessary to have the head shaved; on the other hand, I think there is a decided advantage in leaving, when you can, as much as a quarter of an inch of hair; the ointment seems to have better play, and is kept on the part affected. By persevering with this plan of treatment for a few weeks, varying from a month in slight cases to three months in very chronic ones—which we may conveniently call severe cases—the complaint is nearly always cured. (Dr. Harrison, Ibid, p. 467.)

SALOL.—Its Use in the Treatment of Skin Affections.

Dr. Edmund Saalfeld, of Berlin (*Deutsche Med. Wochens.*), reports successful results obtained with salol in the treatment of various skin affections. According to his experience, a 5 to 8 per cent. ointment of salol with vaseline, or with balsam of Peru and cold-cream, acts better than the ordinary ceratum plumbi subacetat., or the ointment of salicylate of soda. Remarkably prompt results were obtained in some cases of impetigo contagiosa. One patient suffering from sycosis simplex, which had spread over the entire face and neck, obtained marked relief from salol ointment, to which Dr. Saalfeld subsequently added sulphur and carbonate of potash, with the satisfaction of seeing the disease entirely disappear. (Medical News, Jan. 5, p. 18.)

SEBORRHŒA SICCA OF THE SCALP.—An Ointment for.

Vidal (*Progr. Méd.*) recommends the following formula:—Precipitated sulphur, 15 parts; castor oil, 50 parts; cacao butter, 12

parts; balsam of Peru, 2 parts. The sulphur and the castor oil are to be mixed thoroughly, then the cacao butter is to be added with the aid of a gentle heat, and finally the balsam. The ointment is to be rubbed into the hairy scalp every morning and evening. (N.Y. Med. Journal, Dec. 22, p. 700.)

STRUMA, SCROFULA, AND TUBERCULOSIS in relation to Skin Diseases.

Leloir considers at some length, in the *Bulletin Médical*, the conditions known as struma, scrofula, and tuberculosis. The first is usually transitory, and to be looked upon as a normal physiological state of early life; if it persists, it constitutes the so-called lymphatic temperament, which, in itself, is not pathological, but predisposing. It is characterised, anatomically, by dilatation of the lymphatic spaces of the cutaneous structure. In this state there is a strong disposition to catarrhal troubles, impetigo, and eczema, and a good soil is furnished for the lodgement and multiplication of parasites. In regard to scrofula, if tuberculous disorders and the so-called strumous state are taken from it, very little, if anything, remains. As the author adds, the "king's evil" of the older writers is but a local tuberculosis. Lupus vulgaris is also, beyond all cavil, a tubercular lesion. In fact, all the various local lesions which have been considered as scrofulous are of a tuberculous nature, and in order that general infection—tuberculosis—may be prevented, active therapeutic measures are urgently demanded. (American Journal, Feb., p. 209.)

SYCOSIS.—Treatment of.—(Unna, *Monatshefte Prak. Dermatologie.*)

Unna considers that the ordinary form of sycosis is like that due to the trichophyton tonsurans, caused by parasitic agency, though in it the microphytes are cocci, hence he names this variety coccogenic sycosis. The radical cure of it is a much more difficult problem. Not as if we do not possess a great number of good remedies capable of destroying the cocci, and at the same time of removing the resulting inflammation of the follicles, but since it demands an uncommon degree of perseverance to pursue the parasitic germs into all their lurking places and completely to annihilate them. In general the greatest success will be obtained if this form be treated as a furunculosis, and the affected area be shaved in order to produce a deeper influence on the disease. In severe cases a carbolic-mercurial or a resorcin-plaster muslin should be worn constantly; or where treatment at night alone is granted, a zinc sulphur salve muslin should be applied all night, while every morning the suppurating hair follicles should be epilated, and touched individually with a 5 per cent. resorcin spirit. The entire series of reducing agents—sulphur, ichthyol, resorcin, pyrogallol, chrysarobin—can then be employed at night as ointments (2-5 per cent.), or as moist compresses (especially ichthyol, 10 per cent.). In like manner mer-

curials may be used, as unguentum hydrargyri, which can be rendered stronger by the addition of carbolic acid, 10 per cent., and corrosive sublimate up to 1 per cent. Greater difficulties arise should the hair from any reason remain uncut; then after epilation and bathing the suppurating follicles, must follow the application of very soft ointments of zinc and sulphur, or of weak strengths of resorcin and corrosive sublimate. Such treatment is, however, always much more protracted. All surgical measures are superfluous and dangerous. Scarifications act favourably for the moment, but lead to fresh implantations of cocci. Epilation *en masse* without selection only furnishes new centres of infection. Consequently, Unna recommends solely an "epilatio necessitatis," the extraction of hairs from those follicles which are already suppurating, in order to be able the better to disinfect them with carbolic acid, resorcin, or sublimate. When the sycosis has been got rid of by the foregoing measures, the as important after-treatment and prophylaxis begin, without which relapses may certainly be anticipated. To these belong before everything the treatment of the sycotic catarrh, which is much more frequently present than many physicians, and even the patients themselves, are inclined to believe. Nasal douches of a 1 per cent. solution of ichthyol, persevered in for a lengthened period twice a day, are very efficient in removing it. Washing with overfatty sublimate soap, shaving with the same soap, destruction of each fresh suppurating point as it appears, by extracting the implicated hairs, and cauterising by touching with the previously mentioned spirituous solutions, or with a pointed rod dipped in a corrosive sublimate paste. The nightly inunction of a weak resorcin or sublimate vaseline, when the beard is still worn, or with a corresponding paste if it is removed, and continued steadily. Such are some of the modes of procedure, which, if strictly observed, will serve to keep off relapses. (Dr. Jamieson's Periscope, Edinburgh Medical Journal, Oct., p. 380.)

ULCERS.—Cocaine in the Treatment of.

Mr. E. N. Nason, M.B., of the General Hospital, Birmingham, says: I have for some time found cocaine of great use in the relief of pain caused by the dressing of burns, fistulæ, painful ulcers, etc., and think a note to that effect may be of use to others, and save much unnecessary pain to patients. I use a 2 per cent. solution, and have it sprayed upon the surface directly it is exposed. This acts almost at once, and the dressing may then be continued with very little pain, and, in the case of extensive burns, with much less shock. The solution should in such cases be used warm. In the case of fistulæ a few drops should be poured over the sinuses before they are packed. With a 2 per cent. solution there is little fear of constitutional effects, and it will be found to act as well and as quickly as a much stronger one. (Lancet, Jan. 5, p. 16.)

AFFECTIONS OF THE EAR.

FOREIGN BODIES IN THE EAR.—(*Dr. Marian, Prager Med. Woch.*) Dr. Marian, of Aussig, Bohemia, adds one more timely warning on this important subject. In answer to the question "What shall the general practitioner do when confronted with a foreign body in the ear?" he says: The first thing to be done is to convince himself that a foreign body is really in the ear; also whether it is really in the ear the patient says contains it. It has happened that the patient, in his excitement, has presented the wrong ear for treatment. If, now, the foreign body being present in the ear, any instrument is inserted, without the proper illumination of the ear, not only will the patient suffer pain, but he runs a great risk of receiving an injury to his membrana tympani. After having diagnosticated the presence of a foreign body with the aid of a mirror, the next step is to determine its position, whether it lies in the meatus, the isthmus, or against the membrana in the fundus of the auditory canal. Then the employment of a moderately strong syringing with warm water will usually dislodge and bring out the foreign substance, if it is not wedged tight. "In all cases, however, in which the general practitioner is unable to determine accurately the precise situation of the foreign body, or in which the foreign substance is imbedded or wedged in the canal, or when the latter has been irritated, wounded, and swollen, through previous unskilful attempts at extraction, the advice is given not ever to attempt syringing the ear, but to call in the service of an aurist. Because it now becomes necessary to adopt a treatment which no general practitioner of medicine is able to carry out." (American Journal, Feb., p. 199.)

HYPERÆMIA OF TYMPANUM.—Carbolic Acid Glycerine in. Morpurgo, of Trieste, at the *International Congress of Otology*, Brussels, 1888, recalled a communication on this subject made by B. Hewson, at the Basle Congress, on the action of phenic glycerine in hyperæmia of the tympanum. Morpurgo stated that for fifteen months he had employed this drug with marked success. In nearly all cases complaining of pain, and presenting signs of hyperæmia of the middle ear, the instillation, every two hours, of a ten per cent. solution of phenic acid (carbolic acid) in glycerine, rapidly arrested the pain, and prevented suppuration and perforation of the membrana. Ménière and Delstanche also praised the action of this solution, even recommending, in some cases, the use of equal parts of phenic acid and glycerine. (American Journal, Jan., p. 89.)

LABYRINTHINE DEAFNESS.—Treatment by Pilocarpin. Mr. Field, of St. Mary's Hospital, records eighteen cases of labyrinthine deafness, in which either the vibrating tuning-fork on the mastoid was not heard, or in which bone conduction was an un-

doubted minus quality, had been subjected to daily hypodermic injections of pilocarpin, as recommended by Politzer. The injections on each patient ranged from twenty to forty in number. The treatment commenced with injections of an eighth or a tenth of a grain, which was gradually increased up to, in some instances, a fourth of a grain. Mr. Field is in the habit also of passing a few drops of a much weaker solution up the Eustachian tube by the catheter; this is particularly indicated where the middle ear is involved as well as the labyrinth. After injection, the patients were either kept in bed for two hours, or ordered to lie down in a warm room for at least an hour and a half. The effect on the heart was carefully watched. The treatment was never continued longer than ten days if no improvement, as shown by the tuning-fork and other tests, resulted. Weakness, excessive salivation, palpitation, throbbing tinnitus, giddiness, and impaired vision were taken as indications for either lessening the dose or discontinuing the treatment altogether. The cases have not been specially selected, except in so far that in all bone conduction, as measured by the vibrating tuning-fork placed on the mastoid, vertex, and teeth, was either markedly impaired or absent. In some instances, the onset was gradual, and in others sudden. Some exhibited tinnitus, others paracusis as well. Middle-ear disease was not always, though often, coexistent. The ages varied greatly, as did the assigned cause. The results of treatment in some instances were exceedingly good, in others bad or indifferent. (British Med. Journal, March 2, p. 471.)

MIDWIFERY AND THE DISEASES OF WOMEN, ETC.

AMPUTATION OF THE PREGNANT UTERUS.

I have now done four operations on the principle laid down by Professor Porro, and all the mothers have recovered, and the children have all lived. The operation I perform is certainly not Porro's operation, for I have altered nearly every detail; but the discovery of the new principle—that of removing the uterus to save the mother from the fatal effects of suppurative metritis, and the possibility of having the same trouble over again—is the credit of my friend Professor Porro. I prefer to give the operation the name of no particular person, because men's names attached to operations are always productive of misunderstandings, quarrels, and confusion. I indicate the principle by calling it "amputation of the pregnant uterus," every word of this term being fact, and not theory. This operation, I venture to predict, will revolutionise the obstetric art, and in two years we shall hear no more of craniotomy and evisceration, for this new method will save more lives than these proceedings do, and it is far easier of performance. It is the easiest operation in abdominal surgery,

and every country practitioner ought to be able and always prepared to perform it. No special instruments are required—nothing but a knife, some artery forceps, a piece of rubber drainage-tube, two or three knitting-needles, and a little perchloride of iron. My method of operating is to make an incision through the middle line large enough to admit my hand, and then I pass a piece of rubber drainage-tube (without any holes in it) as a loop over the fundus uteri, and bring it down so as to encircle the cervix, taking care that it does not include a loop of intestine. I then make a single hitch and draw it tight round the cervix, so as to completely stop the circulation. I give the ends of the tube to an assistant, who keeps them well on the strain, so as to prevent the loose knot from slipping, the reason of this being that should there be any bleeding and any necessity for further constriction, I could secure this in a moment, without undoing any knot, and the simplicity of this method greatly commends it. I then make a small opening in the uterus, and enlarge it by tearing with my two forefingers, seize the child by a foot and remove it. I then remove the placenta, and by that time the uterus has completely contracted, and is easily drawn through the wound in the abdominal wall. The constricting tube will now probably require to be tightened, and the second hitch of the knot may be put on at the same time, and the work is practically done. Stuff a few sponges into the wound to keep the cavity clear of blood, and pass the knitting needles through the flattened tube and through the cervix, and in this simple way a clamp of the most efficient kind is at once made. The uterus is removed about three-quarters of an inch above the rubber tube. The usual stitches are put in, the wound closed round the stump, which, of course, is brought to the lower part of the opening, and then the stump is dressed with perchloride of iron in the usual way. The operation takes far less time to perform than it takes to describe, and as there is hardly any possibility of complications, it is one of the simplest operations that can be undertaken, and must always be pretty much the same; for this reason no one need be in any fear about undertaking it, for in the absence of variation in the difficulties to be encountered, it differs entirely from any other operation in abdominal surgery. If performed before the patient has been mauled about by ineffectual attempts to deliver, its mortality will be no greater than that of ovariotomy, and the arguments in its favour against all alternative proceedings, are, first, that it cannot be more dangerous to the mother than most of these are, that it saves the life of the child, that it prevents the unfortunate mother from again being placed in a similar condition, and it certainly has the great advantage over alternative proceedings having a similar object, that its great simplicity, as contrasted for instance with operations proposed by Thomas, Müller, and Sänger, will make it

possible for the country doctor, less experienced in surgery, to perform it without hesitation. These complicated and difficult proceedings may have their advantages, though I confess I do not see them, but they will be left for the hands of experienced specialists. The operation I have described will be the operation of emergency, when only the resources of general practice are at hand. (Mr. Lawson Tait, Brit. Med. Journal, Nov. 17, p. 1100.)

CRANIOTOMY.—The Methods of.

At the Obstetrical Society, on January 2, 1889, a paper was read by Dr. Archibald Donald, honorary surgeon to St. Mary's Hospital for Women, Manchester. The discussion of the relative merits of craniotomy and Cæsarean section was avoided. It was pointed out that it is of importance still further to improve the methods of craniotomy, since there are certain cases in which the operation is indicated and will continue to be performed even by those holding the most advanced views in regard to Cæsarean section; for example:—1. When forceps has been tried for a long time without effect, or when podalic version has been performed and the head cannot be extricated. 2. When there is certainty, or great probability, that the child is dead. 3. When the condition of the mother is such as would cause Cæsarean section to be almost certainly fatal. 4. In certain cases of deformity of the fœtus. A table of eighteen cases of craniotomy was appended to the paper, and in each case full details were given of the indications for the operation, the method adopted, and the subsequent history of the patient. Remarks were then made on the method of craniotomy to be preferred: (1) in the less marked degrees of pelvic contraction; (2) in cases in which the contraction is considerable. In the first class of cases the method to be preferred depended greatly on the nature of previous attempts a delivery. If the axis-traction forceps has been used to the limits of safety and the head does not come through, the vertex may be perforated without removing the forceps, and the forceps used as a tractor after a firm grasp of the head has been obtained by turning the screw as far as possible. The method recommended in the more severe degrees of contraction consisted in: (1) podalic version and extraction of the body, (2) perforation through the roof of the mouth, (3) cephalotripsy of the after-coming head, and (4) extraction of head by means of cephalotribe, or by traction on the body and lower jaw, combined with supra-pubic pressure. The advantages of this method were stated to be as follows:—1. The base of the skull is effectually broken up. 2. The head is well fixed during perforation and crushing. 3. The position of the head is easily altered, thus allowing the cephalotribe to be applied in different directions, or the head to be brought down with its crushed diameter in the smallest diameter of the pelvis. 4. The collapse and moulding of the head are often brought about readily

by combined traction on the jaw and body of the child and supra-pubic pressure. The difficulties of this method were discussed under the following heads: difficulty (1) in the preliminary version; (2) in extracting the body; and (3) in perforating and crushing the head. (Lancet, Jan. 12, p. 78.)

ECLAMPSIA AND ALBUMINURIA.—(SANTOS, *Archiv für Gynakol.*) Santos records fifty-three cases of eclampsia in the Buda-Pesth clinic, and concludes from his study of the subject that albuminuria in pregnancy is the result of a reflex irritation of the sympathetic and renal nerves caused by the increasing distension of the uterus, and the irritation of the uterine nerves by this distension and subsequent contraction. It is physiological in pregnancy, and a diagnostic symptom of pregnancy. This conception accounts for the more frequent occurrence of albuminuria in young women, in whom reflexes are most easily excited. Any condition heightening the general reflexes favours albuminuria. Santos regards eclampsia as an "acute peripheral epilepsy," whose genetic zone is the uterus. Upon this basis he readily explains the action of narcotics, and rare cases in which eclampsia occurs without albuminuria. (American Journal, Oct., p. 429.)

ENDOMETRITIS (CHRONIC).—Dr. Duke's Spiral Wire Stems. In this tedious and troublesome complaint the endometrium degenerates into a pyogenic membrane, and the uterine cavity becomes converted into a chronic abscess. Acting on this view, I have for some time past treated all cases in which I find the characteristic muco-purulent discharge existing by rapid dilatation, cleansing of the uterine cavity by the curette, and the insertion *directly afterwards* of one of my spiral wire stems, which, by keeping the cervical canal patulous, straightening the uterus, and permitting free drainage, I have found to yield excellent results. The stems I have last designed (made by Messrs. Arnold and Sons, London) I find can be worn without inconvenience by the patient without being confined to bed if the proper sized stem be chosen, as I have now added a flat disc of wire at the base of the stem which makes it self-retaining, and I have been much pleased by the relief afforded to some patients with whom every other means had been previously tried except the flexible stem. The conclusion I have come to is that, unless free exit is given for the secretions, the smallest quantity being allowed to remain *in utero* keeps up the unhealthy condition of the endometrium, just as a similar secretion allowed to remain long enough in the bladder will thwart all our efforts to keep that organ aseptic. I find that a great number of the reflex symptoms complained of by patients suffering from chronic endometritis vanish for good and all when the treatment I have described is adopted, and I hope that others with larger opportunities than I possess

will give the stem a trial. There can be no difficulty in removing it even if worn for a considerable time, as traction on the lowest strand of wire will remove the whole with ease, as the wire of which the stem is composed is slight, and will unwind from below with the certainty of doing no damage to the cervical canal. Greenhalgh's stems have the disadvantage of not being self-retaining, unless the patient is kept in the recumbent position, and also being composed of rubber got rapidly fœtid, even in cases where the syringe was daily used. I have the greatest objection to rubber pessaries of all kinds, as they never keep clean, always have a bad odour when removed, and are not lasting, besides being as a rule expensive. I think my stems on trial will be found to supply a want, being light, cheap, lasting, and cleanly, and I venture to say an improvement on any other stem pessary I have seen. (Dr. Alexander Duke, p. 411; and British Med. Journal, Feb. 14, p. 355.)

EXTIRPATION OF THE UTERUS.—Statistics of the Operation. I shall not attempt to give the results of this operation statistically, but it is important that we should know what a few of the most experienced operators have been able to accomplish. Leopold wrote to me on the 11th of this month, stating that up to that date he had performed total extirpation of the uterus by the vagina in 83 cases with only 5 deaths, a mortality of 6 per cent. Péan, writing on the 13th, says that from 1882 to the end of 1887 he had done 22 operations, 15 successful, but with 7 deaths; but that this year he has had 16 cases, all successful and no deaths. Professor Olshausen, of Berlin, appears to have the largest experience of this operation, for he writes to me that between May, 1887, and November 5th, 1888, he had 99 cases with 13 deaths. In 1881-82, he had 22 cases with 8 deaths; from January, 1883, to April, 1887, 31 cases with 5 deaths=53 cases in Halle with 13 deaths, to be compared with 99 in Berlin, also 13 deaths. All these were cases of total extirpation by the vagina for cancer. He has had 1 case where seven years have elapsed without recurrence, and 3 of five years and upwards. Martin, of Berlin, who had previously published 66 cases where cancer led to the operation, with 11 deaths, or 16 per cent. mortality, writes on the 16th of this month:—"Since the Washington Congress in 1887, I have performed the vaginal total operation in 22 instances" (he does not say in how many for cancer). "All recovered but one, who died of hemorrhage. Of supravaginal amputation I performed altogether 6 with one death." It would be easy to collect a very large number of cases, such as Schroeder, 59, with 5 per cent. mortality; Fritsch, 60, 7 per cent. fatal. But these do not bring us later than 1886, and they all tell the same story of greater success following larger experience. As to the comparative mortality of infra- and supravaginal amputation and total excision, the results vary so much in

successive years and in the practice of different operators, that I have been unable to collect materials for a trustworthy contrast either as to the immediate fatality or as to the frequency of recurrence of disease, but it certainly appears that recurrence is earlier after partial than after complete operations. In some series the remarkable fact comes out that supravaginal amputation stands the test of recurrence better than complete excision. This would be inexplicable if it were not for the probability that the disease had been generally much further advanced in the cases where total excision was performed than in the others. Our American brethren have been before us in adopting the operation of total excision of the uterus, and, as elsewhere, their results have improved with time and experience. The cases hitherto performed in this country have not been enough to serve for any comparison of results with those abroad, but there have been many successful cases published since that of Mr. Jennings, five by Dr. Purcell, and others by Dr. Duncan, Mr. Reeves, and Dr. Sinclair, of Manchester; and they all teach the lesson that if the operation is to be successful it must be done early, before surrounding structures are involved in the disease. (Sir T. S. Wells, British Medical Journal, Dec. 8, p. 1269.)

[For Sir Spencer Wells's article on Extirpation of the Uterus for Malignant Disease, see page 395 of this volume of the *Retrospect.*]

GONORRHŒAL SALPINGITIS.—The Etiology of.

The acceptance of the views of some of the gynæcologists upon this subject to anything like their full extent involves the acceptance of the theory of specific causation of gonorrhœa, as the so-called "latent" gonorrhœa of the male is a condition in which a visible external discharge is not thought to be necessary, but in which the specific micro-organisms (the gonococci) are supposed to be retained within the posterior urethra in a state of sufficient activity to transmit the disease. This view, which has many and constantly increasing arguments in its favour, can hardly as yet be considered as more than a working hypothesis, but will probably be definitely settled in the near future through the efforts and skill of the indefatigable microscopical observers who are working at it in the various parts of the world. In the meantime there can be no question that, in certain cases, infection of the cervical canal occurs, followed by an endometritis, and, finally, by a hydro- or a pyo-salpinx, or by a pelvic peritonitis, or inflammation and abscess of the ovaries; and, while not accepting to the fullest extent the views of the extremists in this matter, we certainly should profit by the excellent work which has been done in this direction by so many gynæcologists. It is not necessary that we should believe with Tait that gonorrhœal salpingitis is followed by destructive suppuration of the uterine appendages; or with Sänger, that it remains invariably a disease of the surfaces of the mucous and serous membranes. We need not

think with Noeggerath that all, or nearly all, the wives of men who have once had gonorrhœa are doomed to hopeless invalidism; nor with Sinclair, that gonorrhœa is the cause of an "overwhelming proportion" of the cases of pelvic peritonitis. If, however, we meet with a patient who presents the following series of symptoms graphically detailed by Dr. Sinclair, and, with a clinical history of gonorrhœal infection or of distinct exposure to such infection, we should certainly associate the two as cause and effect. A young woman, healthy before marriage, who develops persistent leucorrhœa, dysmenorrhœa and pelvic distress, aborts or has puerperal troubles after confinement, and when examined shows reddening of the orifices of Bartholini's glands, an enlarged and sensitive uterus, swollen and tender ovaries, fulness and thickening about the broad ligament, and loss of elasticity throughout the whole pelvic floor, presents in all probability a case which may be truly described as typical, provided the above-mentioned clinical history can be obtained. If, however, there is no such history, I am not prepared to assume that because at some distant date the husband had a urethritis, or because a certain form of bacteria is found in her discharges, the case is, therefore, certainly one of gonorrhœal infection. While that cause may undoubtedly produce complications of extreme gravity, I have no doubt that in many, probably the majority, of cases, these complications disappear or subside as readily as gonorrhœal epididymitis in the male. (Dr. J. Wm. White, Philadelphia, British Med. Journal, Feb. 9, p. 287.)

HYSTERORRHAPHY.—The Value of.

Lee, in the *American Journal of Obstetrics*, for December, 1888, reports six cases of primary hysterorrhaphy, in four of which there was an undoubted cure. He regards it as not only a justifiable, but an indispensable, operation in cases of retro-displacement and fixation of the uterus, which resist all other modes of treatment, and in which the patient's sufferings are unbearable. If the uterus is movable, this constitutes *per se* a contra-indication to hysterorrhaphy, and calls for Alexander's operation. He disapproves of passing the sutures through the fundus uteri, and prefers Chinese silk to silkworm gut. No death from hysterorrhaphy has yet been reported.

[Since the above was written we have heard of one immediate and one remote fatal result following this operation.—Ed. *Amer. Jour.*] (American Journal of Medical Science, Feb., p. 216.)

OVARIAN TUMOURS.—The Rotation of.

Rotation of ovarian tumours is of frequent occurrence, Rokitansky's observations on the dead showing that it occurs in over thirteen per cent., and mine, on the living, that it occurs in about nine and a half per cent. of all cases of ovarian tumours; the difference in our figures being due, 1st, to the fact that early ovariotomy being now the rule, more tumours are removed before they have a chance

of rotating than at the time he made his observations; 2nd, to the fact that a certain number of cases will probably die of the complication, and these do not come into my tables. It occurs with greater frequency during the period of active menstrual life than at the two extremes, and more often in married than in single women. It is so frequently associated with pregnancy that this condition must be considered a predisposing cause. It is also especially apt to occur with dermoid tumours. Adhesions are the rule whenever the acute stage has been reached, but there are some few exceptions, and slight twisting does not seem to cause adhesions. It frequently happens that the circulation throughout the pedicle is entirely cut off, but a fresh blood-supply is usually rapidly obtained through the adhesions. Tumours of the right and left ovaries are equally liable to rotation, and may twist either to the right or to the left, but the turn from right to left seems most common on the right side, and from left to right on the left side. There is no certain evidence as to the motor force which first starts the rotation, and it seems improbable that this can ever be exactly settled, but probably different causes may act in different cases. The steps of the process seem to be: gradual rotation, without symptoms or serious pathological change, then sudden serious symptoms, with rapid increase of the tumour, then decrease or complete cessation of growth, followed, sooner or later, by renewed activity, as the circulation through the adhesions becomes free enough to replace the diminution or arrest of that through the pedicle. (Mr. Knowsley Thornton, American Journal, Oct., p. 371.)

[See also Mr. Thornton's paper on Rotation of Ovarian Tumours, at page 398 of this volume of the *Retrospect*.]

PELVIC TUMOURS.—Is any given Pelvic Tumour Inside or Outside the Broad Ligament?

In a discussion upon Pyo-salpinx, Mr. Lawson Tait mentioned one method by which they might easily determine whether a tumour was in the broad ligament. On the left side anything in the broad ligament would pass more or less round the rectum like a ring, and that could be felt. If in the right broad ligament, then it would pass up along the brim of the pelvis and could be felt there. There was no difficulty at all. Since that light had come to him the whole scheme of pelvic pathology lay in distinguishing between whether tumours were inside or outside the broad ligament. (British Gynæcological Journal, Feb. 1889, p. 462.)

PILOCARPINE in Pregnancy, Labour and the Lying-in-State.

At the Obstetrical Society, on Oct. 3, 1888, Dr. John Phillips read a paper on the Value of Pilocarpine in Pregnancy, Labour, and the Lying-in-State, in which he treated the questions at issue under five heads: (1) the use of pilocarpine as an abortive; (2) for the induction of premature labour; (3) intra-partum; (4) post-partum and

during the puerperium ; and (5) in albuminuria, with or without eclampsia. Seven cases had been experimented on, and the results given in detail. Forty-eight cases under the second heading had been collected from all sources, of which twenty-seven had been arranged in two tables, while two original cases had been appended in full. The author concluded that five only of these could be considered as unqualified successes, and thought that pilocarpine was able in a certain number of cases to induce labour, but that it was not in any way reliable as an ecbolic ; those cases in which there was a tendency to premature termination of pregnancy were most suitable for its administration. Pilocarpine, intra-partum, was considered under three heads—(*a*) the "latent period" of labour ; (*b*) the dilating stage of labour ; (*c*) the expulsive stage of labour. Five instances occurred in the author's practice, and in one sphygmographic tracings were taken at various intervals. The result of thirty-nine cases was worked out, twenty-eight being successes and eleven failures. The author concluded that during the dilating and expulsive stages of labour pilocarpine was equally productive of increase and intensification of labour pains with ergot, but with more certainty of action and with none of its ill effects. Cases of simple uterine inertia were the most suitable for its administration. The drug was useless post partum and to stay hæmorrhage. In a third table the results of thirty-nine published cases of puerperal eclampsia had been given, with recovery of thirty-one mothers and eight maternal deaths, or 20·5 per cent. Although good effects were produced in twenty-eight cases, yet in nine such dangerous symptoms manifested themselves that the author was bound to warn others against its use, especially when coma was pronounced. He recommended bleeding in conjunction with pilocarpine where it will not act alone, and adduced evidence to show that the mortality is not greater under this mode of treatment than in any other. Statistics of treatment by other methods were given, and the results compared. The question of the reason why pilocarpine is productive of uterine pains was discussed, and three theories given; the "latent period" of the drug was referred to, and illustrated by cases. Further remarks were made upon the action of pilocarpine on the fœtus (with a fourth table), complications attendant on its use, the proper dose for administration, and contraindications. The paper terminated with conclusions as to its value and the precautions to be observed when used. (Lancet, Oct. 13, p. 719.)

Pilocarpine in Puerperal Convulsions.

In a paper upon the properties of pilocarpine, Dr. John Phillips warns the profession against the use of pilocarpine in puerperal eclampsia, especially during coma, on the ground of the dangerous liability to filling of the bronchial tubes with secretion. Dr. Herman quite concurred with that warning, but would extend it,

for in those eclamptic patients who recovered from the convulsions, coma, &c., the great danger was from pulmonary complications, bronchitis, pneumonia, &c., resulting from the great congestion of the lungs during the fits, and he thought the liability to these lung troubles would be increased by pilocarpine. (Trans. of Obstetrical Society of London, 1888, p. 402.)

PUERPERAL ANÆMIA.—Its Treatment by Arsenic.

Dr. William Osler, in the *Boston Med. and Surg. Journal*, says that of the twenty-one cases of pernicious anæmia of which he has notes, nine were in women, and in five of these the condition developed post partum. One of them he reports, by way of illustration. The patient began and continued to grow anæmic after confinement, could not sit up in bed without fainting, had constant vomiting and uncontrollable diarrhœa. Under the continued administration of Fowler's solution she steadily improved and became robust and of a good colour, though iron had previously been given without any benefit whatever. The author then reviews the history of the employment of arsenic in pernicious anæmia, and calls attention to the fact that we do not fully understand the reason why the drug should be so useful in some cases and so useless in others. It certainly has often an effect in profound anæmia much resembling that of a specific; like that of quinine in ague, and iron in chlorosis. The initial dose should be five drops, increasing gradually to twenty or thirty drops three times a day. Puffiness of the eyelids, œdema above the eyebrows, vomiting or diarrhœa indicate that the drug should be suspended for a time. Sometimes arsenious acid is well borne, when Fowler's solution disagrees with the stomach. The point of greatest importance is that the medicine must be given for long periods and in increasing doses. In post-partum cases recovery is always slow, and it is well to intermit arsenic for a few weeks; but it should be given at intervals for many months, even when the health is apparently re-established, as there is a well-recognised tendency to relapse in these cases. (American Journal, Feb., p. 177.)

THIRD STAGE OF LABOUR.—The Management of.

(1) When the child is born, note that the fundus uteri stands at or below the level of the umbilicus, and that the uterus does not contain a second child. Give an ergotine injection in a multipara, at any rate, if labour has been slow. (2) Do not tie the cord until the child has cried freely, and then tie only one ligature. (3) Cut the cord on the placental side of the ligature, and let the placental part of the cord drain thoroughly into any small dish; then tie it, to prevent any staining of the bed linen. Tie a second ligature at once, however, if a second child be present. (4) Before applying the first ligature it should be thoroughly ascertained by abdominal palpation that the uterus is not so relaxed as to bleed. (5) Continue

with the hand on the uterus; do nothing when a good contraction comes on, and allow the uterus its normal relaxation after the pain is over. (6) Should bleeding from the uterus come on, or should the pains be feeble, then grasp the uterus so as to bring on a contraction to arrest hemorrhage. (7) Do nothing further in a normal case until the lessening of the bulk of the uterus shows that the placenta is separated and being expelled; the expulsion may then be aided by "expression." (8) One can tell when the placenta is separated and not driven down by noting that gentle expression drives it down.—"Since practising this procedure I have had no difficulty in the normal Third Stage of Labour. Interference is reduced to a minimum, and the membranes are expelled intact." (Dr. Berry Hart, p. 384.)

TRENDELENBURG'S POSTURE.—Its Adoption in Gynæcological Examinations.

Mendes de Leon, in a recent number of the *Centralblatt für Gynäkologie*, describes how he adopted the plan suggested by Trendelenburg in cases of epicystotomy, in order to reach deeply-seated and adherent ovaries, which he was endeavouring to remove by laparotomy. The pelvis was elevated by bending the legs of the patient over the shoulders of two assistants, who stood with their backs toward the foot of the table. The ovaries were easily reached, as the intestines gravitated out of the pelvic cavity. The writer suggests that this method is also applicable to ordinary gynæcological examinations, when it is difficult to practise the bimanual on account of tympanites. The patient is placed on a lounge, with her head toward its foot, and her feet hanging over its back. In this position it is claimed that the pelvic viscera can be palpated with much greater ease than is possible by the ordinary method. (American Journal, Jan., p. 108.)

VESICO-UTERINE FISTULA.—New Operation for.

At the Obstetrical Society, on Oct. 3, 1888, Dr. Champneys, in a paper on a New Operation for the Cure of Vesico-uterine Fistula, described a case where he performed the new method of operating. The cervix being held down, the anterior vaginal wall was dissected away from the cervix to beyond the limits of the fistula. By this procedure a hole was left in the bladder and another in the cervix. These were closed and the vaginal wall repaired with complete success. The author compared this operation with those in use, and enumerated what he believed to be its advantages. In this case silver sutures were used; those closing the two holes were cut short; those uniting the vaginal wall to the cervix were afterwards removed. Dr. Champneys used silver sutures because he was anxious not to fail in a new operation on account of the sutures. In subsequent operations he would be inclined to try silk, so great was his belief that fistulæ would be easily and successfully closed by this method. (Lancet, Oct. 13, p. 718.)

VOMITING OF PREGNANCY.—Treatment.

Hennig (*Münchener med. Wochenschrift*, No. 28, 1888) regards the milder form of vomiting of pregnancy as due to a wound, inflammation or dislocation of the uterus; a distended bladder or rectum may also cause it. The treatment is the removal of the cause. The more severe form is sympathetic, and a neurosis. Nux vomica and cocoa essence, or cocaine, are sometimes useful in these cases; dilatation of the cervix he has rarely found successful. The induction of labour he considers the only efficient treatment for severe cases.

Sänger had seen one case in which the vomiting was caused by carcinoma of the stomach; in another, a laceration of the cervix provoked vomiting, which ceased when the laceration was operated upon.

Günther (*Centralblatt für Gynäkologie*, No. 29, 1888) regards the affection as a reflex neurosis, and treated five cases by galvanism, the positive pole being placed against the cervix, the negative between the eighth and twelfth dorsal vertebræ. From two and a half to five milliampères were employed, for seven to ten minutes. He regards the interruption of the current as the most potent cause of abortion following electrical treatment, and therefore takes especial pains to avoid the accident. His results were good. (American Journal, Oct., p. 426.)

Medicine.

GENERAL MEDICINE AND THERAPEUTICS.

Art. 1.—ON THE RELATION OF ALBUMINURIA TO LIFE ASSURANCE.

By James Tyson, M.D., Professor of General Pathology in the University of Pennsylvania.

[The paper from which the following is taken opens with the records of two cases of Functional Albuminuria, the second of which occurred at the very unusual age of 41 years. Although Dr. Tyson's remarks are made with special reference to Life Insurance they have obviously an equal pertinence to the general question of the interpretation of Albuminuria as a Symptom. (See also papers on Intermittent and Latent Albuminuria by Dr. Johnson and Dr. Ralfe in the *Synopsis* of this volume.)]

These cases I regard as illustrating a class in which, although there is albuminuria, its subjects have not renal disease and are insurable risks. Such conclusion is, however, based upon a study of the cases extending over months in the one instance, and years in the other, a study which is seldom, if ever, possible to the ordinary medical examiner. There can be no doubt, however, that could a set of rules be laid down for his guidance, the well-trained examiner might save to his company a certain number of risks which are now lost by it. Unfortunately, from necessity perhaps, at the present day, the majority of medical examiners are neither well educated nor well trained. Supposing, however, that these important desiderata are attained, as it is reasonable to believe they will at no distant day, are there any conditions which if observed will enable the companies to secure these risks which are now rejected? I believe there are and I submit them to your consideration.

1st. It is scarcely necessary to say that the applicant must in all other respects present the signs of good health.

2nd. The albuminuria should be unaccompanied by tube casts. However perfect may appear the health of an applicant with albuminuria, the presence of casts in his urine must effectually close the gates of life insurance against him. Casts and albumin conjoined can receive only one interpretation—structural change in the kidney either acute or chronic. Here, however, let me say I have known men with good medical education say that casts were passed in a given specimen when there were none; certain granular aggregations having been mistaken for them.

3rd. If the quantity of albumin is large, the applicant should be rejected irrespective of the presence of casts. The term large albuminuria admits, of course, of considerable latitude in its application; but I should say that an albuminuria is large in which the albumin habitually exceeds one-fifth the bulk of the specimen examined.

4th. A consideration which goes far toward establishing the functional character of an albuminuria, although not essential to this end, is the absence of albumin on rising in the morning. Nor dare it, of course, be said that such an albuminuria precludes the existence of organic disease. It must be taken in connection with the other considerations mentioned.

A 5th point of importance is specific gravity, meaning thereby the specific gravity of the twenty-four hours' urine, or what my friend, Dr. Charles W. Purdy, of Chicago, calls the "real" specific gravity. The specific gravity of any portion of the twenty-four hours' urine, or the "apparent" specific gravity is of limited value, varying greatly with the time of day and relation to meals. If we regard the specific gravity of a normal twenty-four hours' urine (say 50 oz.) as 1·020, the following may be laid down: *albuminuria is least significant when the specific gravity is high*, throwing out, of course, the consideration of sugar. The specific gravity is a direct measure of the solids, which in health are strikingly constant for each twenty-four hours, while the same is true in a less degree of the watery part of the secretion. Hence, the specific gravity of the twenty-four hours' urine is tolerably constant. In all forms of renal disease the solids are diminished, and in all except acute nephritis and cyanotic induration the specific gravity is lowered. In these two it is not lowered because in them the quantity of urine is also markedly less, and, in consequence, the specific gravity is increased to 1·028 and even higher. In acute nephritis the presence of blood may also contribute to such specific gravity. Strictly speaking, acute nephritis may be ignored, because no one ill of it is likely ever to apply for life insurance. In functional albuminuria the specific gravity remains normal. Dr. Purdy even says that his observations in many of these cases show a specific gravity above the normal standard, reaching 1·022 to 1·030..

Whenever, therefore, in addition to the absence of other symptoms and signs alluded to, the "real" specific gravity is above 1·020, another most important fact is in evidence against the presence of organic disease and in favor of the view that the albuminuria is functional. On the other hand, if the real specific gravity of the urine be 1·012, 1·010, 1·008, or even less, as it sometimes is, it would be hazardous to accept such a case of albuminuria, however good may be the apparent health of the applicant and even in the absence of casts. To judge unfavorably

from the specific gravity of any portion of the twenty-four hours would be exceedingly unfair to the candidate.

6th. The signs of hypertrophy of the left ventricle and of high vascular tension associated with albuminuria are conclusive symptoms of renal disease and should exclude the candidate. High vascular tension may sometimes be shown to exist by the sphygmograph, even when not appreciable to the touch.

7th. A highly important consideration is the age of the candidate. Albuminuria is much less apt to be of the functional kind in persons over forty years of age than in those who are younger, especially between the ages of twenty-one and thirty-five. It is questionable whether any person with seemingly functional albuminuria who has reached the age of forty should be accepted unless he has been long under the observation of a competent and conscientious observer.

8th. The presence of true gout in any shape precludes admission to life insurance, because gout is always sooner or later followed by interstitial nephritis.

Finally. The retinal symptoms so commonly associated with chronic Bright's disease, although usually late in their appearance, do sometimes form the earliest noted sign of this affection, and whether or not conjoined with albuminuria must effectually exclude the candidate from its advantages.

These, in brief, are the conditions which, if observed, appear to me to enable one to establish conclusively the functional character of an albuminuria, the presence of which should not exclude a candidate from life assurance. They might have been further elaborated, but I prefer to leave them to be discussed as presented. It is to be remembered, however, that observations should extend over a considerable period of time, also that there is reasonable doubt as to whether the requisite knowledge and training are sufficiently general to secure intelligent recognition of the conditions. Take, for example, so simple a matter as examining for tube casts, which may be regarded as almost the easiest sort of microscopical work. Yet, how few medical examiners are competent to make such examinations. Most of them have no microscopes, and many who have them use them so rarely that their opinion whether positive or negative as to the presence of casts cannot be relied upon. On the other hand, there are those who are competent to apply these conditions, and it is reasonable to suppose that this number will gradually increase.

I conclude, therefore, that life assurance associations should recognise a condition of functional albuminuria out of consideration of their own interests, as well as in justice to a class which is coming to be recognised as more numerous as our knowledge increases, and who are blindly excluded from benefits to which they are entitled.—*Medical News, Nov.* 17, 1888, *p.* 546.

2.—CLINICAL OBSERVATIONS ON PYRODINE, A NEW ANTIPYRETIC.

By Julius Dreschfeld, M.D., F.R.C.P., Professor of Pathology, Victoria University; Physician to Royal Infirmary, Manchester.

Pyrodine is a white, crystalline powder, very sparingly soluble in cold water; it possesses very little taste and is therefore easily administered in powder form. Before giving this drug to patients I tried it in doses of 8 and 12 grains, for several consecutive days on healthy persons, and found that it was easily taken and produced no ill effects. It caused neither nausea nor vomiting, did not interfere with digestion, and had no effect either on the body temperature or urine secretion. Having satisfied myself that in these doses it did not produce any toxic effects, even if taken for six or eight days, I tried it on patients suffering from various forms of fever. Without entering into details, I may briefly summarise the results.

Croupous Pneumonia.—The drug was given in all cases of this affection which were admitted into the Infirmary during June, July, and August, when the temperature reached 104°. These were twelve in number. In all, pyrodine quickly reduced the temperature, and in three there was no further rise after the first administration. In the other nine the reduction lasted over 12 hours. The dose varied from 4 grains in children to 12 grains in adults. In all, it was well borne, without any unpleasant by-effects. The reduction of temperature was accompanied by profuse sweating. Eleven of the 12 cases recovered. The fatal case concerned a patient admitted under Dr. Leech, who had fallen into the river Irwell, and who was found suffering from pneumonia when admitted. He was in a moribund condition, and died nine hours after admission.

Scarlet Fever.—Pyrodine was tried in 25 cases of scarlet fever, where the initial temperature was very high, and where the children suffered very much in consequence of the high fever. The effect in these cases was very good. The temperature was quickly reduced, occasionally below normal (in one case to 95·2°), without any unpleasant symptom being produced, such as collapse or prostration. In some of these cases, where the anginal symptoms were very severe, the temperature would rise again some hours after a dose of pyrodine had been given (the dose varied from 2 to 4 grains, according to the age of the child), but was promptly checked by a small dose of pyrodine. We did not find that the cases which had taken the drug were more liable to suffer from post-scarlatinal nephritis.

Typhus.—During June and July 20 cases of typhus were admitted into the Monsall Hospital; these cases came from a few infected houses where a small and limited epidemic had broken

out. Pyrodine was given by Dr. Oldham to all these 20 cases, and the result was in every way highly satisfactory. It is well known that in typhus, more than in any other zymotic disease, the degree of pyrexia is of importance, and that in this disease most antipyretics are of little use. In former epidemics Dr. Oldham had tried kairin with very disastrous effects, quinine was found of very little service, and antipyrin only delayed the crisis. In pyrodine we found a drug which answered the purpose very well. Given in small quantities, one or two doses per diem, it reduced the temperature, and enabled the patient to pass through the fever period with a reduced temperature, varying from 100° to 102°. It produced great comfort to the patient, diminished the delirium, and did not delay the crisis. It was further found that the patients required only a very small amount of stimulants, and that their convalescence was very rapid.

Of the twenty cases treated with pyrodine, two died: a female patient, æt. 58, who was very prostrate on admission, pulse very feeble, suffering from great drowsiness and low muttering delirium, died three days after admission; and a man, æt. 39, who, when admitted, was suffering already from commencing collapse, died the second day after admission. In both these cases only one dose of pyrodine had been given.

During the month of April, ten cases of typhus were treated at Monsall Hospital without pyrodine, and of these ten cases (which, as regards gravity of disease, age, previous health, social condition of patient, could well be compared with the twenty cases of typhus treated with pyrodine) four died. In one of the twenty patients the toxic effect of the drug appeared after a few doses of pyrodine had been given, the patient became slightly jaundiced, the urine became highly coloured, and contained biliary colouring matter and globulin. These symptoms, however, rapidly passed off as soon as the drug was withheld, and were not followed by any other evil effects, except an anæmic condition of the patient, which lasted several days.

Typhoid.—We tried pyrodine in typhoid fever both at the Infirmary and at the Monsall Hospital, but we soon found that its toxic effects, which showed themselves much more readily in this disease than in any other, were a drawback to its free administration. It reduced the temperature of typhoid very effectively (in a case under the care of my colleague, Dr. Leech, where antipyrin was badly borne, pyrodine reduced the temperature eight degrees within two hours), but it was found in some cases, that after the third or fourth administration, symptoms due to aniline poisoning (jaundice, hebetude, occasionally sickness) came on. That these symptoms were due to the action of pyrodine on the blood was shown by the experiments on animals, to be detailed hereafter. These symptoms would disappear after a

few days, and be followed by anæmia, and, though not alarming in themselves, they were of sufficient intensity to make us very guarded in the administration of pyrodine in typhoid.

Pyrodine was also tried in other cases of pyrexia, as in a case of traumatic meningitis, in a case of peritonitis following acute phosphorus poisoning, and it answered well in both cases, which recovered.

In a case of *sub-acute articular rheumatism*, it produced relief from the pain, which had resisted salicylate of sodium, salol, and antipyrin, but after a few doses, toxic symptoms appeared, which were followed by somewhat prolonged anæmia.

In cases of *acute articular rheumatism*, it did not act as well as salol; I tried it, however, only in two cases.

Pyrodine in Hyperpyrexia.—From a number or cases of hyperpyrexia, especially when accompanying rheumatic arthritis, I have come to the conclusion that our antipyretic drugs, antifebrin and antipyrin, have no effect; in fact, it would appear as if the temperature increased more rapidly after their administration. This opinion is, I believe, shared by many observers. It was a matter of some interest to see whether pyrodine would act better in such cases. Unfortunately, few cases of hyperpyrexia presented themselves during the last few months. In a patient, under the care of my colleague, Mr. Heath, suffering from fracture at the base of the brain, with a temperature of 107·5°, pyrodine was tried in a large dose without much effect. Also in a case of typhoid fever, which I saw with Mr. Coates, where the temperature quickly rose from 103° to 107·8° a small dose (3 grains) of pyrodine had but little effect. The cold bath brought the temperature down to 101°, but it quickly rose again to 107°, and the patient died. A few days ago Dr. Oldham tried pyrodine in a case of hyperpyrexia, where the temperature was 106·5°. The temperature fell quickly, and a few hours after stood at 95·5°, the patient feeling comfortable, and this remarkable fall of eleven degrees was not associated with any symptoms of collapse. With so limited an experience, we cannot well express, as yet, an opinion as to the efficacy of pyrodine in hyperpyrexia.

Migraine.—Our experience of pyrodine in this affection is very limited. In two cases, where antipyrin failed, it acted well, and in a case of intense headache accompanying tubercular disease of the temporal bone, where quinine and antipyrin had failed to give relief, it acted well after several doses had been given, but here, too, toxic symptoms appeared.

Toxic Action of Pyrodine.—The toxic effects which pyrodine produced (jaundice, hebetude, icteric urine, which occasionally showed the presence of globulin and albumin) were so much like those seen occasionally after the administration of antifebrin and phenacetin (Lépine), that it seemed likely that they were due to

a mild form of hæmoglobinæmia. Experiments on animals made with pure acetylphenylhydrozin fully confirmed this view. Having obtained the necessary licence, I administered to rabbits, by means of a catheter passed into the stomach, varying doses of this body. It was found that doses of acetylphenylhydrozin, which did not exceed one grain per pound of the body weight of the animal, produced no ill-effect; if, however, this dose was exceeded, the animal became anæmic, and if the administration was continued for two or three days (one dose per diem), then the rabbit died from typical hæmoglobinæmia, as the post-mortem examination showed. The urine contained large quantities of hæmoglobin casts; the kidneys showed the characteristic deposits in the convoluted tubes; the spleen, of chocolate colour, contained large masses of hæmoglobin and groups of cells, each enclosing several red blood corpuscles. The liver had a peculiar ochre colour, and showed its capillaries distended with masses of hæmoglobin. The blood showed the spectrum of methæmoglobin. From these observations it is clear that pyrodine exhibits toxic effects much sooner than either antifebrin or phenacetin, and that it is not safe to give it in large doses or to repeat the dose often. The results of our investigation, briefly summed up, are:—

(1) Pyrodine is a powerful antipyretic.

(2) It reduces fever temperatures quickly, and maintains the temperature at a low level for some hours.

(3) It is easily taken, and produces marked perspiration, but not nausea, vomiting, or collapse.

(4) It is especially applicable in cases of pneumonia, scarlet fever, and typhus. Given in small doses in the latter disease it enables the patient to pass through the fever period at a lower temperature range without delaying the crisis, and it seems also to shorten the period of convalescence.

(5) It is less applicable in cases of typhoid, owing to the early exhibition of toxic symptoms.

(6) It appears to act equally well in migraine and neuralgia, though on this point our observations are as yet not numerous enough to admit of a definite opinion.

(7) Given in often repeated doses at short intervals, it easily shows toxic properties, and these depend on the action of the drug on the blood, producing hæmoglobinæmia. It should not be given (unless the temperature be very high) oftener than once in 18 or 24 hours and it is not safe to continue its use for more than a few days.

(8) It is found to act in cases where the other antipyretics have failed.

(9) The dose for children is 2 to 4 grains; for adults 8 to 12 grains.

(10) It is a much more powerful antipyretic than either antipyrin, antifebrin, or phenacetin, but it is also much more toxic

than these bodies. This disadvantage is, however, reduced by the fact that it is rarely necessary to give more than one dose in 12 to 18 hours, as the temperature is kept low for a longer period than if any of the other antipyretics are given.

(11) It reduces the pulse as well as the temperature, and often causes diuresis.—*Medical Chronicle, Nov.* 1887, *p.* 90.

3.—ON NITRITE OF ETHYL AND ITS THERAPEUTIC USES.

By D. J. Leech, M.D., F.R.C.P., Prof. of Therapeutics, Victoria University; and Physician to the Royal Infirmary, Manchester.

Of late years, much attention has been devoted by pharmacists to spirit of nitrous ether. A better method for its production has been introduced, and its assay has been rendered easy by the methods for its analysis invented by Eykman of Tokio, Allen of Sheffield, and others. But it has been found that however well made spirit of nitrous ether may be, it tends rapidly to lose its ethyl nitrite if dispensed in the ordinary way, and pharmaceutical chemists have sought to devise preparations better adapted for retaining a definite strength of the ethyl salt than the ordinary spirit of nitre.

About two years ago Williams showed that glycerine tends to prevent the loss of nitrite of ethyl from its solution in alcohol; and last April Dunstan and Dymond proposed a new method of making nitrite ethyl, and suggested a preparation which might be employed medicinally. It consists of a dilute solution of nitrite of ethyl in absolute alcohol, or in absolute alcohol containing five per cent. of glycerine, and analyses were given showing that thus dissolved the ethyl nitrite solution may be long kept without important change.

I have recently made trial of two solutions of this kind which Professor Dunstan has been good enough to forward me—one contained a little under 2 per cent., and the other about 3 per cent. of nitrite of ethyl, and from the results obtained I am satisfied that the introduction of such a solution into general use would prove very advantageous.

For nitrite of ethyl has pharmacological properties which render it in fitting cases of the highest therapeutic value. Like other nitrites, it causes dilatation of the vessels, and markedly decreases arterial tension. It not only relaxes the muscles of the arterioles, but also, as Professor Fraser has shown, of those of the smaller bronchial tubes; thus dilating bronchial tubes unduly narrowed by spasmodic contraction of their muscles.

An important point to bear in mind with regard to the action of nitrite of ethyl is the fact that its influence is not by any means as rapid as that of nitrite of amyl when administered by inhala-

tion, and several minutes elapse before its action on the vessels is distinctly perceptible. Marked tension fall, indeed, is usually only observed from five to fifteen minutes after the administration of an ordinary dose, though the drug doubtless exerts some influence within a much shorter period, and its effect on the bronchial muscles sometimes becomes perceptible in less than a minute. Its physiological influence is often distinct for half an hour to an hour, and may at times be traced for a much longer period. In this respect ethyl nitrite resembles nitro-glycerine, and differs from nitrite of amyl, the action of which, at least when inhaled, rarely lasts more than two or three minutes.

The dose required to produce the physiological effects is very small. Half a drachm of a 3 per cent. solution will usually produce dilatation of the vessels, which may be distinctly shown by the lowered tension of the pulse. A much smaller amount will sometimes suffice for this effect, and I have not met with anyone whose circulation was not affected by a drachm.

Turning now to the therapeutic uses of the solution of nitrite of ethyl, I may say that as a diuretic and diaphoretic it is, like other nitrites, inconstant in action. No proof has yet been offered that these bodies directly stimulate the glandular secreting structures. When they produce any effect it is by their power of dilating the vessels. In the kidney the blood-flow through the glomerular vessels is thus rendered more rapid, hence the watery excretion is at times augmented. The skin secretion is probably under certain conditions increased by the additional blood supply to the tissues amongst which the sudoriparous glands lie. The effect of the drug will doubtless vary with the condition of the circulation at the time of administration. It is certainly not a reliable diuretic, for doses of half a drachm to one drachm of 3 per cent. solution often fail to affect the urine secretion. On the other hand, I have seen an increase both in renal and cardiac disease after its use, and it is worthy of trial, especially in the elderly, or where the tension is high. In the healthy the diaphoretic action is not often observed, but under some conditions it produces an increased action of the skin, and it will probably be found of use in catarrhal conditions. I can certainly bear personal testimony to the diaphoretic influence produced on me by drachm doses of a 3 per cent. solution during an attack of febrile catarrh.

In the treatment of ailments connected with high tension, ethyl nitrite solution is of great value. I have found it prevent the advent of anginal attacks, just as nitro-glycerine does, but like nitro-glycerine, it is not of service in removing at once anginal pain. For this purpose its action is too slow. In cases of dyspnœa, where with high tension the heart's power is beginning to fail, nitrite of ethyl often acts like a charm, and this is especially the case if, as not unfrequently happens, bronchial spasm complicates

the cardiac condition. Not only is breathing relieved, but the pulse becomes fuller and altogether of better character. Like nitro-glycerine, it sometimes seems to act as a cardiac stimulant, but this effect may only be due to the relief afforded to the heart by the dilatation of the vessels. Wherever with fair tension the heart's power is weak and dyspnœa is present, the administration of 30 to 90 minims of a 3 per cent. solution of nitrite of ethyl is worthy of a trial. But it is perhaps in asthmatic and bronchitic affections that the nitrite will be found of the most marked benefit.

In genuine asthma I have so far had no opportunity of trying it, but in that form which so often complicates bronchitis I have usually found 50 to 90 minims of a 3 per cent. solution of nitrite of ethyl give more or less relief. The direct effect of the drug lasts from 30 to 90 minutes, or longer, and even when this must have ceased the spasmodic trouble does not always return.

The solution of ethyl nitrite in alcohol possesses two advantages over spiritus ætheris nitrosi: it is more stable and less disagreeable. Mr. Elborne kindly estimated, from time to time, the amount of nitrite present in the preparations used by me, and the loss of nitrite was certainly very slight, though no special care was taken to prevent the escape of the nitrite. A four ounce bottle, of a 2·7 per cent. solution, lost 0·4 of this percentage during its use in six weeks, and from a weaker but better prepared solution the loss during a longer time was much less. The advantage which the solution possesses over ordinary spirit of nitre, as regards taste, depends on the absence of aldehyde and other products of the complex chemical changes which take place during the formation of the spirit of nitrite ethyl.

The influence now claimed for nitrite of ethyl over the respiratory organs is greater than that which has generally been accorded to the Pharmacopœial preparation, yet it must be remembered that spirit of nitre has been for ages a favourite remedy in bronchial catarrh, though the cause of its utility was not known. And doubtless the good effects produced in bronchitis would have been more noticed had the preparation employed contained a due amount of nitrite. A preparation in which there is less than 2 per cent. of the ethyl salt is not likely to influence the bronchial muscles unless employed in larger doses than are usually administered, but the greater part of the spirit of nitre given has always contained much less than this. In our present hospital compound, for example, I found only 0·3 per cent.

It is indeed, perhaps, well that the nitrous ether commonly sold, contains only a small quantity of its active ingredient, for large doses of the nitrite of ethyl may so influence the circulation as to cause faintness either by too rapidly reducing the resistance against which the heart has to contract, or by acting directly on

this organ. This effect I have seen produced by 100 minims of good spirit of nitrous ether, and the same result occurred to myself after taking 25 minims of a 25 per cent. solution. It would perhaps, therefore, lead to trouble sometimes if spirit of nitre, as supplied to the public, did always contain its due amount of nitrite.

For the due therapeutic use of nitrite of ethyl it is most important that medical men should know the strength of the solution they give, for it is often necessary to accommodate the dose to the peculiarities of the patient. Some are very susceptible to the action of the drug. I have known less than a drachm of a 2 per cent. solution produce the throbbing in the head characteristic of the nitrites, whilst others will take three times the dose without suffering from any subjective discomforts. The effect of the drug in disease will largely depend on the dose given. Hence, if it is to be used effectively, we must be supplied with a solution of definite strength, which can be readily analysed and readily kept up to a definite standard. Such a solution as that suggested by Dunstan and Dymond seems to fulfil the conditions required, and might be introduced into the Pharmacopœia as "Solution of Nitrous Ether," or "Solution of Ethyl Nitrite." The spirit might then be relegated to the use of the public. As ordinarily supplied it could do no harm, and it might sometimes do good. One point, however, will have to be borne in mind. Solution of nitrite of ethyl decomposes quickly when in contact with water. To obtain reliable results from it, therefore, it should not be dispensed mixed with water, but separately; the requisite dose being measured out and added to water immediately before administration. —*Medical Chronicle, Dec.* 1888, *p.* 177.

4.—ON THE INFLUENCE OF CARLSBAD WATER ON GOUT.

By Schuman Le Clerq, M.D., Carlsbad, Austria.

[The following excerpt is taken from an exceedingly interesting paper, intended primarily to demonstrate that the Carlsbad water has practically no influence upon the excretion of uric acid, in spite of its obvious beneficial effects in most gouty states.]

Looked upon clinically, the well-known beneficial influence of a course with the Carlsbad waters on gouty patients points in two directions. We notice first in these patients an amelioration in those symptoms which are explained as being occasioned by the presence of the "materia peccans," be it excessive or not, in the blood or organs; I do not mean to say that gouty "tophi" and deposits appear to become considerably smaller after a course with the waters; this can hardly be expected, since Ebstein has proved that these deposits of urate are separated from the living tissue, which is yet capable of undergoing a metamorphosis, by dead

tissue,—but we see, for instance, that albuminuria, inflammations of the renal pelvis, and nervous troubles, as hypochondria, melancholia, hysteria, which accompany gout, may be improved or disappear. According to our view we explain these complications as being produced by excessive quantities of uric acid dissolved in the blood, hence we may justly say that by the imbibing of the warm alkaline water, which so rapidly becomes diffused in the blood, the conditions for a prompt discharge are more favorable. The diluted urine, which soon becomes alkaline, in a short time removes the surplus of uric acid circulating in the blood.

But we also see, secondly, that the gouty attacks, formerly frequent, are kept off for some time, or have become less intense, or are stopped entirely, after a course with the mineral water. With regard to this therapeutical effect we cannot get along with the former explanation of a washing out, but we must say the cause of the disease, the diathesis, seems mitigated.

Without attempting at present to explain this fact, I shall content myself with saying: Since Minkowski's thorough researches we know the liver to have a third function, besides the gall secretion and the glycogen formation, namely, the synthetic formation of uric acid. We know that sulphate of soda, so plentiful in our mineral water, considerably stimulates the gall secretion; it is likely that the influence of this salt on the liver is not only shown with regard to the gall secretion, but that in some way or another the salt affects also the uric acid formation. We cannot, however, as yet say in what way or how far it is the case, as no preparatory investigations exist in that line. But aside from the question of an excess of uric acid in gout, be it localized (Ebstein) or general (Garrod, Ebstein), we have in gout an anomaly in organic metamorphosis which is undoubtedly a complicated process, since modern investigation would tend to prove that uric acid is synthetically formed by xanthine bodies (Minkowski, Mach), and since this physiological formation of uric acid sythesis has been attributed to various organs. Charcot already tried to connect gout with functional disturbances of the liver and Minkowski's experiments tend to attribute the synthesis of uric acid to the same organ.

Such anomalies of metamorphosis have derived benefit from the Carlsbad cure, which I am inclined to ascribe to the great improvement which has taken place in the general bodily condition; and as the food is so important a pathogenetic factor in that group of diseases (diabetes, adiposity, gout, oxaluria, pyrocatechinuria, cystinuria), we might justly ask whether a faulty digestion of the stomach cannot promote the gouty process under certain conditions, of which we unfortunately know nothing, for instance, by the absorption of abnormous products of the food. Wine, for instance, has no influence on the increase or decrease of uric acid excretion;

yet many close observers attributed a sudden attack of gout positively and with apparent right to a single imprudent use of wine in certain cases. How could we, then, explain this effect, if it were not for the well-established observation that alcohol has a direct protracting and thus pathological influence on the digestion of the stomach? From this stand-point also, i.e., merely from the direct topical action of Carlsbad water on the stomach and the liver, which is the seat of the synthetical composition of uric acid, we could explain its recognized beneficial influence, at least in many phases and forms of gout.

Now, according to Garrod, the mineral waters are indicated in gout for the reason that the diathesis leading to its production is often closely connected with deranged hepatic function, and Ebstein recommends them particularly in those forms of gout complicated with plethora or gastric symptoms (see also Murray Forbes, Barlow, Parry and Sutton, and Robson Roose).

The compound action of Carlsbad water arises in the first place from the influence of the warm water itself, which, "when absorbed in large quantities, powerfully stimulates the process of the animal economy and increases the various secretions" (Garrod), secondly from the salts. With regard to these, the facts placed beyond doubt by experiments are the following: Sulphate of soda produces increased peristalsis and excretion of water, urine, and urea. The cathartic action cuts short, so to speak, complete digestion and absorption of the ingesta. Excretory matters, which would otherwise be retained (and possibly cause auto-infection?) are quicker eliminated than sub norma. Chloride of sodium greatly excites the stomach's functions and induces increase of urine and of the nitrogenous excretion; while carbonate of soda improves the digestive power of the stomach, increases peristalsis, and exalts the natural alkalinity of the blood. If now, by virtue of the properties of the constituents of Carlsbad water, there is an increase of peristalsis and diuresis, and an increased flow of liquids in the tissues, while plenty of out-door exercise and baths are taken, and less food—which is partly cut short, partly eagerly assimilated, owing to a hunger of the protoplasm—fewer products of the regressive metamorphosis will circulate in the blood and organs, while those that circulate are more easily eliminated on account of the diuretic effect and the increase of all secretory functions. Finally, the secretions are not only increased by the Carlsbad water, but also the pressure under which they are secreted is raised by sipping fluids. This is most likely due to nervous influence, for Kronecker shows that a liquid taken in many small sips will, for the time, completely abolish the inhibitory action of the vagus of the heart. Brunton calls attention to to this fact "in consequence of which Carlsbad water, when taken in numerous sips for an hour or more, as at Carlsbad itself, is so

exceedingly efficacious in hepatic diseases." This consideration will serve to assist us in explaining how certain predispositions of tissues, like the cartilage, to receive injuries in gout may be effectually combated with the Carlsbad mineral water. The increased pressure just referred to would be beneficial by increasing the "vis a tergo" in such organs as have a torpid tissue change, owing to the total absence of blood-vessels or their scant distribution at long intervals between the capillary vessels. The alimentary liquid being now easier renewed the conditions are not favorable for a deposit of urates. So much for the Carlsbad water.

The Carlsbad cure, which combines yet other factors, such as bathing, diet, and exercise, has been thoroughly studied in an excellent paper, read by your present chairman, Dr. Page, before this distinguished society, some time ago, and I take the liberty of referring to it for further information. Hot baths in particular will be useful by increasing the activity of circulation and respiration. Increased consumption of oxygen and exhalation of carbonic acid will effectuate conversion of fat (adiposity being so often connected with gout) and decomposition of the constituents of the body containing nitrogen, with corresponding increase of urea in the urine. Even such a critical observer as Leichtenstern acknowledges "the fact shown by multiplied experience that the products and residue of chronic inflammation and hyperplasia of tissue (hypertrophy of liver in gout) can be favorably influenced by warm baths, even of indifferent temperature, when supported by a corresponding change in diet, mode of life, bodily exercise, and the use of mineral waters." Then mud-baths will prove one of the most agreeable forms of local or general poultices to the gouty patient, and with regard to Russian baths it may be said that Tichborne lately detected the presence of uric acid in the sweat secreted in Russian baths.

As a contraindication of the "Carlsbad cure" in gout I am inclined to determine those advanced stages of the disease with serious structural implication of the kidneys, or where cachexia has resulted, aside from such other general pathological cases where the cure is contraindicated anyhow (cardiac disease, considerable anæmia, carcinoma, pulmonary consumption, debility).

If, according to Garrod, the causes exciting a gouty fit are those which induce a less alkaline condition of the blood, or which temporarily check the eliminating power of the kidneys, the properties of the alkaline and diuretic Carlsbad water fully establishes its prophylactic value.

A good proof for the efficacy of alkalies is no doubt Cullen's advocating them, and we can lay the more stress upon this statement, as, being a partisan of an entirely opposite idea on the nature of gout, he could not possibly be said to have been biased by theoretical reflections.—*N. Y. Medical Record, Feb.* 2, 1887, *p.* 115.

5.—ON THE NATURE OF PERNICIOUS ANÆMIA.

By William Hunter, M.D., F.R.S.Edin., John Lucas Walker Student of the University of Cambridge.

[After dealing at length with the changes found in the blood-forming and blood-destroying organs, one of the most striking of which appears to be an unusually large amount of iron in the tissue of the liver, Dr. Hunter says:]

Of these changes, the most marked are those which point to some disorder of blood destruction as the characteristic pathological feature of this form of anæmia. In their order of frequency, these changes are to be found constantly in the liver, more or less constantly in the spleen, very frequently though not constantly in the bone marrow, not unfrequently in the kidneys, and occasionally in other organs, such as the pancreas and thyroid gland. In the case of the liver, bone marrow, and kidneys, the changes consist in the presence of an excess of pigment derived from the blood; in the case of the spleen and bone marrow, the evidences of this blood destruction are best recognizable on examination of the fresh tissue, and consist for the most part of changes in the corpuscles themselves.

We are now in a position to consider what is the true pathology of this form of anæmia. Are the changes in the blood, which are certainly one of the most marked features of the disease, the result of a profound disturbance in hæmogenesis, or are they to be traced to some equally marked disorder of hæmolysis? The answer to this question has already been in part supplied by the consideration just given to the anatomical changes most commonly found. As regards the blood-forming organs, we have seen that there is nothing to show why pernicious anæmia should differ so markedly from other forms of anæmia. In the case of the spleen and lymphatic glands, there is no evidence at all of any disturbance in blood-forming function. In the red bone marrow the evidences of some such disturbance are much more marked—viz., the presence of large numbers of nucleated red corpuscles. The presence of these corpuscles in such large numbers has been interpreted as pointing to some failure or imperfection in blood-forming function on the part of this tissue—some interference with the proper development of the red corpuscles. It is obvious, however, that the appearances may be interpreted in another and entirely different way—viz., as pointing to an excessive activity on the part of this tissue in blood formation, such as is met with, for example, after loss of blood. So far from pointing to any interference with blood formation, the presence of such large numbers of nucleated red corpuscles rich in hæmoglobin seems rather to indicate that the conditions are by no means so unfavorable to blood formation as is implied in the view that this form of anæmia is essentially hæmo-

genic in its nature. While their presence in such number points to some marked necessity for increased blood formation, their large size in many cases and their richness in hæmoglobin, along with the richness of the individual corpuscles of the blood in hæmoglobin, seem equally to indicate that the demand is being always met by the bone marrow, even up to the time of death. Unless the conditions were very favorable, we should expect to find less evidence of blood-forming activity in the bone marrow. And if we look for any conditions which might be supposed specially to favour blood formation in this form of anæmia, we shall find them in the presence within the body in this disease of a large supply of material suitable for purposes of blood formation. So far from there being any want of iron in this disease, as is the case in chlorosis, the evidence I have already adduced shows that there is a great excess; and although this is found for the most part in the liver, an organ not concerned in blood formation, it is also found in excess in the bone marrow. It is this tissue which, as all my observations show, must be regarded as the chief seat of blood formation both in health and disease. In this fact we find a ready explanation of one of the most characteristic features of the blood in pernicious anæmia—viz., the relative richness of the blood in hæmoglobin, a condition the very reverse of that found in chlorosis. Failure in blood formation plays, therefore, little or no part in pernicious anæmia.

The foregoing observations must, I think, be regarded as clearly establishing that the essential nature of the disease is excessive blood destruction. When the fact is clearly established, we find an explanation of many of the most characteristic clinical features of the disease.

I have already shown how the relative richness of the blood in hæmoglobin can be at once explained on this view. I have now to add, as regards the other changes in the blood, that my experiments with destructive agents—such as pyrogallic acid and toluylendiamin—clearly show: 1. That a profound degree of oligocythæmia is more readily producible in animals by means of blood-destroying agents than by repeated losses of blood. 2. That the destruction is accompanied by changes in the form and size of the red corpuscles, similar to those constantly met with in pernicious anæmia. 3. That in certain cases the destruction is accompanied by the appearance of small yellow spherical microcytes in the blood, resembling in all respects those so frequently found in pernicious anæmia. In their most typical form, I am therefore inclined to regard these bodies as products of blood destruction, not as stages in the evolution of young red corpuscles.

Further, the establishment of the fact that the liver has a specially prominent part to play in this disease, either in the blood destruction itself or in the disposal of the products of this des-

truction, serves at once to account for the disturbances in liver function so constantly found in this form of anæmia, and evidenced chiefly by recurrent attacks of jaundice or the persistence of a certain degree of jaundice throughout. The observations of Stadelmann and Afanassiew have shown how frequently some degree of jaundice is associated with the increased destruction of blood induced by the action of such drugs as toluylendiamin. Their observations also afford, in part at least, an explanation of the jaundice. The increased flow of bile (polycholia), which always in the first instance results, is soon followed by increased consistency of the bile, greater viscidity, and consequent stagnation in the bile ducts. A similar explanation doubtless applies in many instances to the case of man ; and it is in this fact, as I shall show elsewhere, that we find an explanation of this peculiar feature so often associated with pernicious anæmia.—*Lancet, Sept.* 29, 1888, *p.* 611. (See also *Synopsis* of this volume.)

6.—ON HEMORRHAGE IN SALICYLISM DURING THE TREATMENT OF ACUTE RHEUMATISM.

By Lauriston E. Shaw, M.D., Med. Registrar, Guy's Hospital.

In the Guy's Hospital Reports for 1886-87, I adduced some reasons in support of the view that other hemorrhages besides epistaxis, which had been so frequently observed, were occasional accidents during the administration of large doses of salicylate of soda in the treatment of acute rheumatism. The cases there recorded at length to illustrate this fact were one of retinal hemorrhage and two of hematuria. During the last year there have occurred at Guy's Hospital two instances of a similar result of this treatment, in both of which the bleeding was from the gums.

[The narratives of Dr. Shaw's cases are here omitted.]

The treatment of acute rheumatism by salicine and its derivatives is so widely popular that it is of great importance to consider carefully any drawbacks there may be in its adoption, especially if by so doing we may remove them. It might perhaps be urged that the hemorrhage in the two cases related above was not the result of the drug administered, but was either a purely accidental occurrence, or was a manifestation of the purpuric tendency in rheumatic patients. Against such a suggestion I would point out that in these particular cases the symptom did not occur at the height of the fever, but at a time when its severity was already subdued by treatment, and the patient was suffering from one or more of the well-known toxic effects of the remedy. Moreover, the recurrence of the bleeding when the drug was re-ordered or its dose increased in frequency seems to make the causal relation between the treatment and the symptom as clear as such relations ever are in medicine. It appears also to

be reasonable to expect that, if patients bleed at all as a result of salicylism, they should do so from their gums, which are so liable to bleed in all hemorrhagic states. That they do suffer from epistaxis is established beyond all doubt ; the occurrence is mentioned by nearly all writers on this subject, and the fact was freely accepted by the physicians who took part in the discussion at the Clinical Society in 1881. Of 174 patients treated at Guy's Hospital by these drugs, and particulars of whose cases I tabulated in the paper already mentioned, I found that 6 per cent. were recorded to have had this symptom. Thus the difficulty is not to establish the existence of the hemorrhage, but to satisfactorily explain how it is produced. In the first cases which I observed, I was struck by the bounding pulse which preceded the bleeding, and thought that some increase of arterial tension might be an important agent, but a more careful investigation showed that, although the pulse was large and forcible, it was of decidedly low tension, a fact which was confirmed by sphygmograms taken before, during, and after the period when the patient was thoroughly under the influence of the drug. It seems, therefore, that we must fall back upon some chemical or physical change in the blood which makes it more readily transude through the capillaries, or else upon some secondary change in the walls of the vessels themselves. The point of practical importance to which I would call attention is this. Although I have carefully watched these cases for some years, I have never observed epistaxis or any other hemorrhage occur until several hours, and generally not until some days, after the more common symptoms produced by too large a dose have been well marked. These symptoms are deafness, headache, vomiting, tinnitus aurium, and an irregular and slow pulse, this being the order of frequency with which they occurred in the series of 174 cases before referred to. It would therefore seem that if due regard were paid to these indications that the drug is beginning to produce its physiological effects, and an appropriate alteration made in the dose, the occurrence of loss of blood, which the patient can so ill afford, might be prevented. Patients differ very much in their susceptibility to these remedies, and the amount by which the dose must be reduced varies directly as the rapidity with which symptoms of poisoning are developed. A point requiring further investigation is whether the rather common practice of substituting salicine for salicylate of soda in identical doses, in cases in which the patient seems intolerant of the latter drug, is a thoroughly reliable proceeding. There is a general impression that salicine is less liable to produce ill effects than other preparations, but recorded cases do not fully bear this out. The chemists tell us that salicine is converted into salicylate of soda in the blood, and that, roughly, twenty grains of the original drug produce fifteen grains of the soda salt, and

it is possible that any good effects which follow the substitution of one for the other might equally follow a corresponding diminution in the dose. In reference to this point, it is worth noting that in one of these cases, as well as in one of the fatal cases previously reported, salicine had been substituted for salicylate of soda two or more days before the hemorrhage occurred.—*Lancet, Jan.* 19, *p.* 114.

7.—ON THE PERIOD OF INFECTION IN SCARLET FEVER.

By Arthur Whitelegge, M.D., B.Sc.Lond., Medical Officer of Health, Nottingham.

Assuming that infection is given off by the breath and sputa in the early acute stages of scarlet fever, and by the desquamation later on, it seems not improbable that a lull as regards infectivity may occur in ordinary cases about the end of the first week, at which period the acute symptoms are subsiding and the desquamation has scarcely begun. The following statistical experiment affords some circumstantial evidence in support of this view.

Among the 1700 cases of which I have exact particulars, I find 288 households in which two or more attacks are recorded. Neglecting all third or later attacks, there are left 288 pairs of cases, and the following table shows the relative frequency of intervals between the first and second. The day upon which the first attack occurs is counted as Day 1, the next as Day 2, and so on. Thus, on Day 1 there were, besides the 288 first cases, also 16 second cases; on Day 2, 42 second cases.

	Second cases.		Second cases.		Second cases.
Day 1	16	Day 11	5	Day 21	5
„ 2	42	„ 12	5	„ 22	2
„ 3	30	„ 13	5	„ 23	1
„ 4	19	„ 14	6	„ 24	0
„ 5	21	„ 15	10	„ 25	1
„ 6	17	„ 16	11	„ 26	3
„ 7	18	„ 17	5	„ 27	1
„ 8	18	„ 18	3	„ 28	0
„ 9	6	„ 19	3	„ 29	3
„ 10	6	„ 20	2	„ 30	1

Second cases commencing on Day 1 or Day 2 are presumably due to infection from some other source than their respective first cases; but day by day the probability of a common source for the first and second cases becomes less, while the chance of direct causal relation between them increases. The exclusion of third cases is necessary, since there is no indication to which of the previous cases the interval ought to be calculated; but the effect is to exclude a daily increasing proportion of secondary cases from the record, which might materially modify the result if it were possible to insert them correctly. There is another

cause tending to reduce the numbers of second attacks recorded on the later days—viz., the diminishing susceptibility of the population concerned. Those who run the risk of infection from a patient in the desquamation stage have for the most part already proved their average insusceptibility by escaping infection during similar exposure in the earlier days of the same illness. Some at least of the more susceptible have already acquired infection. It must, however, be remembered that upon the disappearance of acute symptoms the patient is frequently brought back into closer contact with the rest of the household. Allowing due weight to these considerations, there remains a sudden and remarkable drop on the ninth day, which seems to be significant, especially as it is followed by a slight but distinct rise, commencing a few days later, and reaching a maximum about the sixteenth day. The inferences suggested are that the average infectivity suddenly decreases about the sixth day, and increases again about the twelfth. The dates employed for both first and second cases are those of the appearance of the rash.—*Lancet*, *Jan.* 5, 1889, *p.* 14.

8.—SOME FORMS OF PARALYSIS AFTER TYPHOID FEVER.

By George Ross, M.D., Professor of Clinical Medicine, McGill University, Montreal.

[Dr. Ross's paper contains the narratives of two examples of this condition:—*Case* 1. Severe paraplegia directly resulting from typhoid fever, and ending in complete recovery. The limbs were painful, rigid, and much wasted, with the formation of bedsores, but no anæsthesia.—*Case* 2. An unusually extensive paralysis, involving all the limbs, and, in addition, the palatal muscles, after the manner of diphtheritic palsy, ending in recovery.]

The commonest variety of post-typhoid paralysis is that which is confined to the district supplied by one nerve, e.g., the ulnar, peroneal, or the circumflex. Here, it is extremely probable that two distinct pathological conditions may exist. There may be a true interstitial neuritis or there may be an acute parenchymatous change in the nerve elements. The two varieties are separated from each other mainly by the presence or absence of *pain*—this symptom being a marked feature in the former, owing to the pressure exerted upon nerve-filaments, and being absent in the latter where this condition does not exist; the main feature, however, the loss of power in the supplied muscles, being equally present in them both.

The most important, however, of cases of post-typhoid paralysis are those of paraplegia, confined sometimes to the lower extremities and sometimes involving these together with some other parts. Well-marked cases of this kind are sufficiently unusual, and one may see several hundreds of cases of typhoid fever without meet-

ing with a single example. Not much has been written upon it, and in some articles very dissimilar conditions are probably included under the same description.

Although actual observations are not very numerous showing presence of the lesions of peripheral neuritis, and the absence of change in the spinal centres in cases in which post-typhoid paralysis has existed, yet they are sufficient to substantiate the occurrence of such a disorder. Indeed, in the light of the somewhat remarkable observations recorded by Pitres and Vaillard, we may well be surprised that the clinical evidences of neuritis are not more frequently met with. These writers made careful and extensive histological examinations of peripheral nerves in various parts of the body in cases of typhoid fever which had proved fatal from various causes, but in none of whom there had, at any time, been evidences of nervous lesion or disorder. The result was, in every case, to find microscopical evidence of well-marked changes in the structure of most of the nervous trunks and their branches, whilst the actual nerve-roots and the spinal centres remained unaltered. And the question is raised, "How frequently in reality does such neuritis occur?" In the examples recorded there had been nothing from a clinical standpoint to suggest its existence, and they were selected quite by chance. Does it occur both in fatal cases and in those mild or more severe cases which end in recovery? We are led to think the latter possibly true, owing to the frequency with which more or less marked evidences of sensory, motor, or trophic disturbances are met with as sequences of typhoid fever.

Is this neuritis set up by the elevation of temperature? or by the general derangement of nutrition? or may the typhoid poison act directly upon the nervous fibres, irritate these, and ruin their structural integrity—determine, in fact, a parenchymatous neuritis? This neuritis, it is stated, attacks not only the superficial branches which innervate the skin, but also the larger and deeper trunks. May it not, therefore, be that the disturbances in them are to blame for many of the symptoms generally observed in typhoid fever: cutaneous hyperæsthesia, muscular hyperæsthesia, wandering or localized pains in the limbs, etc., symptoms which are often attributed, perhaps rather gratuitously, to irritation of the meninges, or of the spinal cord? The truth would seem to be that when a neuritis of this kind is mild in character and affects a few only of the fibres of any particular nerve, no appreciable symptoms are produced thereby, or, at any rate, such slight phenomena as it may induce are lost in the complex symptomatology of the pyrexia: and that, for some obscure reason, these nervous lesions sometimes become exaggerated, extend to still other bunches of fibres, and then give rise to the well-marked symptoms due to a diffuse or a localized neuritis: sensory, motor, and

trophic disorders, confined to the region supplied by one or several nerves, according to the distribution of the determining lesions.

Post-typhoid paraplegia generally sets in gradually and disappears gradually, but, in rarer examples, it comes on suddenly and passes off either suddenly, or, at any rate, very quickly. Such a case is that reported by Ollivier, which led him to infer the existence of a true, but temporary, congestion of the spinal cord. There is nothing impossible about the hypothesis, and it seems necessary in order to explain such a case, but certainly does not apply to the more common forms of gradual development. Nothnagel suggests that actual spinal hemorrhage is more probably here present, and that meningeal hemorrhage has, in reality, been often found in fatal cases of typhoid fever.

The predilection for certain special groups of muscles observed in the paralyses of plumbism and of diphtheria does not exist in the same degree after typhoid fever. In it there is no rule, and, to explain it, we must look for some cause capable of making its influence felt in an infinite variety of situations: the ulnar or the peroneal nerve, a plexus of nerves, both lower extremities, an upper, together with the opposite lower, extremity. At the same time all degrees of intensity may be observed, from the slightest paresis up to complete abolition of function.

The paralysis generally develops slowly and gradually, and it commonly advances to a considerable degree before being arrested. Arrived at this stage, it may be expected to recede spontaneously or under the influence of treatment, and the case to end in complete restoration of function. A more unusual course is that in which, as before, a slight, or very moderate degree of weakness is gradually developed, and then suddenly a great change occurs, and a perhaps complete paralysis sets in. Even here, the usual result is gradual return of power. In either case, there are exceptional instances in which the paralysis will be permanent even in spite of early and efficient treatment.

The first symptom is generally pain, and this may precede any motor defect by some considerable time. Pretty often, the pain and the commencement of the paralysis are noticed about the same time. The cutaneous sensibility is nearly always diminished, and these sensory disturbances—i.e., pain and anæsthesia—are amongst the most constant phenomena of this affection. In severe and well marked cases trophic changes are seen, consisting chiefly in a greater or less degree of atrophy. There is diminution of electrical contractility, both to the galvanic and the interrupted current.

From a consideration of these general features Nothnagel strongly argues that the condition is essentially the same as one of traumatic paralysis when the injury has been done by some gradually compressing cause. We must, in that case, look for some pathological cause which is capable of acting in this way. Certain it is

that, in fatal cases of diphtheritic paralysis (which has many affinities with that under consideration) there has been found evidence of thickening of the anterior and posterior roots of the involved nerves, especially in the neighbourhood of their point of junction; and also of diphtheritic infiltration within the nerve-sheaths. It is probable that there would be found, in an early stage, proliferation of the connective tissue, and that the subsequent contraction which always sets in under these circumstances would keep up the compression of the nerve-filaments. The same hypothesis would apply to examples of extensive—or even quite limited—areas of anæsthesia.—*American Journal, Jan., p.* 27.

9.—PATHOLOGICAL AFFINITIES OF LEAD AND ALCOHOL.

By Norman Porritt, L.R.C.P.Lond., M.R.C.S.Eng.,
Surgeon to the Huddersfield Infirmary.

To account for the prevalence of lead poisoning in Huddersfield it is only necessary to be acquainted with the character of the water supply. The water supply is derived from several sources, and it is found that the water from two reservoirs is not only abnormally acid, but has also the dangerous property of dissolving lead, and when left standing in the lead service pipes attacks them and forms a plumbic solution. As is well known, other towns have, or have had, water-supplies which act upon lead. Keighley and Sheffield have each acquired some notoriety.

Noticing, in the first place, that both alcohol and the salts of lead coagulate albumen, we may, for convenience sake, divide their actions into two great groups—(1) the excretory group, and (2) the nervous group. Turning first to the excretory group of phenomena, we are at once confronted by the action of these substances on the kidneys. Each is a recognised cause of albuminuria, each can play a part in the causation of granular kidney, whilst the subtle power of each to initiate or develop gout is well known. In short, each damages the kidneys, and may set up not only temporary and functional disorder, but even ineradicable organic renal disease. On the other excretory organs, the chylopoietic viscera, the actions of alcohol and lead, though analogous in their ultimate results, are different in their *modus operandi*. Alcohol attacks the liver; lead, the bowels. Alcohol encourages secretion from the mucous tracts; lead diminishes it. But the increased activity of the alcohol-stimulated mucous membrane is more than counterbalanced by the diminution of oxidation which is taking place in the rest of the body. This diminution of oxidation has a counterpart in the case of lead, for, according to Dr. Lauder Brunton, lead has the power of checking the elimination of uric acid.

Both lead and alcohol have a special, a peculiar, and a well-known action on the nervous system. Alcohol is eliminated from

the system much more easily and more rapidly than lead, and we are not so familiar with its paralysing effects as in the case of a poison which, like lead, slowly accumulates in the body. As is well known, however, paralysis from alcohol, when given in a dose too large for the excretory organs to get rid of, or when administered in smaller quantities over a long period, is not uncommon. The effects of alcohol are essentially paralytic, as are also those of lead, and there is not only nervous or muscular paralysis, but there are, if I may coin a phrase, excretory and metabolic paralysis.

Then alcohol and lead resemble each other in both being elective poisons. Some men are made tipsy by a quantity of drink which would do no more than serve as a thirst-quencher for others; and, on the other hand, of two individuals imbibing a plumbic solution, the one may suffer the throes of colic, whilst the other escapes any unusual manifestation. Lead has little or no elective affinity for children, or the numerous children of our lead-poisoned patients would surely suffer. Of twenty-two cases of lead poisoning which have been under my care, fourteen were males and eight females. Of the eight females three only suffered severely, and they were all above the age of sixty. The conclusions from these facts are that lead has a greater elective affinity for men than women, a greater elective affinity for women than for children, and a greater elective affinity for old than for young women.

Without denying that there is such a thing as elective action I would suggest that by professing to explain the way in which lead singles out one of several individuals by the term "elective action," we are in many cases merely glossing over our ignorance by a plausible and pretty figure of speech. There must be some causes for the elective action of lead, and, although in many cases they may elude us, let us endeavour to search for them, and not take refuge in such an empty phrase as "elective action." I suggest, as one explanation of this elective action, that whatever hinders metabolism or checks excretion will enhance the susceptibility to lead poisoning. Children with active metabolic processes and vigorous excretory organs rarely suffer. Women, whose kidneys are less often afflicted with Bright's disease than those of men, are less frequently the subjects of lead poisoning; whilst my own cases suggest that young women suffer much less severely than old ones. *A priori* there is a strong presumption that men, from more frequent exposure to sources of poisoning, should suffer more often than women. But this presumption can only be held when the cases of workers in lead are considered. In my twenty-two cases one man and one woman were poisoned by lead other than that derived from lead service pipes. Twenty cases remain—thirteen in males and seven in females, or not quite two

to one. In all these cases the source of the lead, on chemical examination, was found to be the drinking water.

Now, in cases of poisoning from a water-supply, it is the wife, and not the husband, who is the more exposed to the poison. She spends the greater part of her time at home; she takes all her meals at home, and often takes supplementary meals or cups of tea when her lord and master is at business. It is, therefore, much more likely that she and her little ones will imbibe more of the toxic material than her frequently absent spouse. The point was illustrated in the case of Milnes *v.* the Corporation of Huddersfield. The plaintiff, a solicitor in Huddersfield, being lead-poisoned, sought for the lead, not in his domestic water-supply, but at the water-supply at his offices in the town. The lead was ultimately discovered in the domestic water-supply which was used by the whole family, but which Mr. Milnes did not suspect, as after breakfast he spent the whole day from home at his offices and business in the town. Notwithstanding, my cases show that more men are affected than women. What is the explanation of this unexpected disproportion? If the lessons of my twenty cases have been rightly understood, I have a clue to the explanation in the greater alcoholic consumption of the male sex.

Examining my thirteen male cases more closely, I find that one died with all the symptoms of abdominal obstruction; two had wrist-drop; two had general convulsions, with more or less complete unconsciousness. The remaining eight cases suffered from nothing worse than colic, though that is bad enough. All the eight colic cases occurred in working-men, and in every case but one there was no evidence to show that the patients were otherwise but steady and usually abstemious men; indeed, one was a total abstainer. Of the five severe cases, three were drunkards or "soakers"; the fatal case was that of a man who worked as a cloth-finisher in a very hot room, had the pot-belly of a drinker, and always drank beer, although his wife never knew him to be the worse for liquor more than three times. Of the two cases in which there was wrist-drop, one man is known to be unsteady, and, though preferring beer, never turns up his nose at spirits. The other wrist-drop case is employed at a hotel, where the opportunities for getting drink are many. Then we come to the two cases where general convulsions with unconsciousness occurred. One of them caused me much anxiety, and when the man's condition was at its worst, as I was leaving his house a neighbour stopped me. The neighbour, after inquiring after my patient, asked me where the lead came from that was poisoning him. I told him the drinking water. He shook his head doubtfully, and said he was sure it could come from nowhere else but the tap of the patient's beer-barrel, the beer having taken it up as it ran from the barrel. The hint thus given was followed

up, and I elicited that the patient had drunk beer to excess for some time before I saw him. In the other case with convulsions a similar history was discovered. These men were repectively twenty-eight and thirty-two years of age, and seemed vigorous, healthy men. One I have lost sight of, but the other occupied the same house for three years after his illness, became a tee-totaller, and has had the best of health. In none of these five cases was any other inmate of the house affected, although at one house the drinking water contained as much as 1·3 grain of lead per gallon. Each patient was married and has a family, and their occupations did not bring them into contact with lead.

Alcohol, then, has a very powerful influence in intensifying the effects of lead. My friend, Mr. Abbott, late of Almondbury, tells me that the worst case of lead poisoning he has seen is that of an inebriate painter; whilst a practitioner in a neighbouring township, where an epidemic of "water-supply lead poisoning" is occurring, assures me that the case of the landlord of a beer-house is the most severe one he has had under his care.

Although Dr. Clifford Allbutt has observed the frequent concurrence of spirit drinking and lead poisoning, he thinks the increased ingestion of lead-laden water which is taken with the spirit explains what is evidently not a mere coincidence. Here I should join issue with Dr. Clifford Allbutt, and allot a considerable share of the toxic work to the alcohol. As we have seen, both alcohol and lead interfere with metabolism and check excretion. The result is: the alcohol locks in the lead; the lead chains up the alcohol. A combination like this accentuates the action of lead, or produces a hybrid sort of affection partly alcoholic and partly plumbic, as in the two cases with general convulsions.

My cases justify, I think, the views I hold, but my contention is further strengthened by a knowledge of the remarkable way in which the kidneys excrete lead. In one of my cases I was uncertain whether the patient was suffering from plumbism or hidden malignant disease. To decide the question, I had, not only the drinking water, but the patient's urine, analysed by Mr. Geo. Jarmain, F.I.C., the borough analyst. His report was that the drinking water contained 0·8 gr. of lead per gallon, the urine 0·28 gr. of lead per gallon. Thus the patient's urine contained such a proportion of lead as would have caused poisoning if present in drinking water. When we bear in mind the albuminuria of inebriety, fluctuating with each increase or diminution in the alcoholic consumption, and disappearing, perhaps, during the abstemious intervals, and when we remember that a great outlet for the excretion of lead is the kidneys, we must allow that there is an *a priori* probability that the combination of lead and alcohol is not likely to be so readily got rid of as either substance singly. The question is important from a practical point of view, and I

would suggest in all cases of lead poisoning, but more especially in the rarer cases where the higher nerve centres are affected, that a careful inquiry into the patient's habits be made.—*Lancet, Jan.* 26, 1889, *p.* 164.

DISEASES OF THE NERVOUS SYSTEM.

10.—ON SYPHILITIC DISEASE OF THE ARTERIES OF THE BRAIN.

By W. R. Gowers, M.D., F.R.S., Assistant Professor of Clinical Medicine in University College, London.

The importance of the early diagnosis of disease of the walls of the arteries is unequalled, even among syphilitic lesions. There is no luetic process which is so likely to cause grave and lasting damage, no process the effects of which when once produced are so entirely beyond our power, and yet can be so surely averted by energetic treatment. For this reason I think it is wise to devote more time to this than to the other detailed subjects, especially since it is a disease in which the diagnosis during life can generally be made with sufficient confidence to give a high value to clinical facts.

The chief mechanism by which this process is effective in causing symptoms is the sudden closure of an artery. The suddenness of the closure is no doubt due to the fact that the narrowed cavity is finally occluded by clot, and in this respect the syphilitic disease does not differ from the other common form of arterial disease—atheroma. The closure is probably not often that of the main artery whose wall is diseased, but of a branch that comes off at the spot, the orifice of which is narrowed, so that the blood in the part beyond tends to stagnate and to clot. The closure has the usual consequence—sudden anæmia and necrosis of the brain tissue, unless there are sufficient anastomoses to provide a collateral circulation. This may be either complete, restoring function, or so incomplete that the continuity of the tissue is preserved by a process which results in sclerotic induration.

The characteristic symptoms are those of a sudden focal lesion of the brain. Until the degenerative period of life is reached such a sudden lesion is excessively rare, except from embolism. Embolism can usually be excluded if there is no valvular heart disease or other source of embolism, and if the patient has not recently suffered from a disease known to cause endocarditis. Hence it follows that the occurrence of such symptoms in an adult under forty-five, who has had syphilis and has not heart disease, may generally be held to indicate syphilitic disease of a cerebral artery,

and this diagnosis may be made with a confidence possible in few other syphilitic lesions. This confidence is confirmed by the occasional opportunities for a verification. When under such conditions the diagnosis has been made, and the patient has subsequently died, the arterial disease has been found—invariably, so far as my own experience and reading have gone. It is true that in rare cases certain other causes of arterial closure must also be excluded. I will mention these presently. They do not really lessen the validity of the statement just made, since the need for considering them is not only rare, but is also generally obvious. But this confidence can exist only before the degenerative period of life. When this period arrives, other causes of arterial closure come into operation—causes which we cannot exclude with the readiness and confidence with which we can exclude embolism. This introduces an element of doubt into the diagnosis of cases over forty-five or fifty years of age. Hence, in endeavouring to ascertain the history of these cases from merely clinical observation, it is desirable to confine our attention to those in which the diagnosis can be made with most confidence. The disease does occur during the later period of life. We have to recognise the fact in our practical diagnosis. It may be that this renders some of our conclusions from the earlier cases imperfect; but we must accept this imperfection in order to obtain as much certainty as possible.

The following conclusions are based on a series of cases that have come under my own observation, excluding those over forty-five years of age. The cases are fifty in number, but on some points (owing to omissions) the precise number available for comparison is somewhat less. The patients were over twenty-five with the exception of one, aged twenty-one. Males were to females as three to one, a proportion that may not be far from the incidence of syphilis itself.

Many observers have noted how various are the intervals between the primary disease and the cerebral lesion, and the variation is conspicuous in this series. In one quarter the lesion occurred during the first two years after infection, and the remainder were pretty evenly distributed during the next twelve years (0-2, 8 cases; 3-5, 7 cases; 6-10, 9 cases; 11-15, 11 cases; 16-20, 4 cases). There was an interval of nineteen years after infection in a man who had well-marked syphilis at eighteen; at the age of thirty-seven an attack of right hemiplegia, while a year later paraplegia came on in a subacute manner. Eighteen years intervened in a woman who at sixteen married a man of unsteady habits; her first two children were born dead, and hemiplegia came at thirty-five, with an onset characteristic of arterial thrombosis. The shortest interval was apparently only three months, but the case does not seem otherwise open to doubt. A

man at the age of twenty-one had, for the first time, a chancre—a distinct hard sore—followed by indolent enlargement of the glands. Three months after the appearance of the sore he had sudden hemiplegia, which slowly passed away, but was followed six months later by a second attack on the same side. In these cases, as indeed in all those compared, a careful search revealed no other cause. In the only other case in which the interval was less than a year, the attack occurred six months after infection.

By far the most common effect of the lesion was hemiplegia, indicating disease of the middle cerebral artery, and probably the closure of a branch to the central ganglia. In only one case did convulsions at the onset suggest that the damage was limited to the cortex. (Simultaneous central softening necessarily prevents such special indication of a cortical lesion.) In three cases hemianopia suggested that the arterial disease was in the posterior cerebral. It is evident, however, that these cases present only some of the effects of vascular disease, and do not present at all its gravest consequences. Lesions may occur in parts of the brain where they cause no local symptoms; and, on the other hand, disease of the basilar and vertebral arteries, sufficient to cause definite symptoms, is seldom survived. These grave effects, however, are well known, and I therefore pass them over. In probably nineteen cases out of twenty, the Sylvian artery is that by which arterial disease causes symptoms (a fact easily explained), and of such disease this series probably presents a fair example. The degree of the paralysis and its course present variations as great as, and similar to, those met with in embolism. It may be slight and transient, or severe, and then often lasting, with only such recovery as occurs from compensation—a slow return of power in the leg and some in the upper arm, the hand remaining powerless, or almost powerless, with late rigidity. I have a few times known two attacks of hemiplegia to occur at intervals of months. Very rarely symptoms of some other syphilitic process coincide with the onset. It is only in such a case in which there is reason to suspect a gumma that I have seen optic neuritis. In several cases patients have, at some other time, suffered from paraplegia, such as might be caused by a gumma pressing on the cord.

The onset occurred during sleep in a third of the cases, a proportion nearly corresponding to the time spent in the sleeping state. During the waking state, the onset is seldom attended by loss of consciousness; it was so attended in only one-tenth of the cases—a fact of much importance. Giddiness and vomiting were occasional accompaniments. Of great significance also is the fact that the onset in more than half the cases was preceded by headache. The pain was usually great, and was either general or chiefly on the side of the subsequent lesion. It preceded the onset sometimes for only a few days or a week, often for several

weeks, rarely for two or three months. It is apparently in some way due to the arterial disease itself. Occasionally, for a day or two before the onset there was a slight tingling or other sensation in the side afterwards paralysed. This one patient, after ten days of severe headache, had repeated attacks of tingling down the side during two days before the onset. The attack itself was often quite sudden, but in some cases it was deliberate or occurred in two stages. The following are instances of these modes of onset:— 1. The arm and leg became weak for a few minutes, then recovered, and half an hour later became suddenly powerless. 2. Slight weakness came on and continued for six days before the sudden hemiplegia. 3. The leg became weak in the evening, and during the night the arm became powerless. 4. The patient woke up one morning with loss of power in the leg, and during the next two days the palsy spread gradually to the arm and face. 5. The arm became suddenly paralysed, and six days later aphasia came on, with a convulsion, doubtless from the occlusion of a cortical branch.

The diagnosis of this disease chiefly depends on the causal indications, negative and positive, the absence of other causes, and the presence of syphilis. The evidence of therapeutics here fails us. The syphilitic process in the artery, and the secondary thrombosis that results, are wholly separate from the simple process in the brain—the necrotic softening, on which the symptoms directly depend. Treat the patient as you will; remove as speedily and as completely as possible the disease of the arterial wall,—you cannot restore the circulation, nor can you avert the resulting necrosis of the brain tissue when once the blood has clotted in the vessel. Compare two series of cases of hemiplegia, one due to embolism and the other to this disease, and you will find that their general course corresponds, however wise and thorough may have been the treatment adopted in the syphilitic series. In each set we meet with cases in which the palsy is slight or transient, but these are cases in which the motor structures have not been involved in the softening, and have only been interfered with for a time because the lesion was adjacent to them. In each series we find cases of severe paralysis, because the motor path was interrupted or the centres were destroyed. Hence by your treatment you may save the patient from a fresh attack or from an extension of the old mischief, but you cannot save him from destruction of tissue or avert its effects. Recognise any warning there may be—anticipate the onset—and the attack may perhaps be prevented; but once the vessel is occluded, your treatment is powerless over the accomplished injury. Thus these are cases in which the result of treatment has no diagnostic significance, and if a positive result seems traceable, we may be sure that the improvement is a coincidence, and not a consequence.

The frequency of the premonitory symptoms, and of a more or less deliberate onset, without loss of consciousness, furnishes diagnostic indications that are often of great importance. They are especially important when some other cause of arterial occlusion coexists, and especially when a source of embolism can be found. Sometimes heart disease is left by rheumatic fever, the individual contracts syphilis, and afterwards has an attack of sudden hemiplegia. We are then unable to avail ourselves of the causal indication unless we find evidence that one influence or the other has recently been active in the system, as by recent embolism or recent syphilitic processes elsewhere. A deliberate onset is strongly in favour of thrombosis, and therefore of syphilitic disease rather than of embolism. Most important of all, however, are the premonitory symptoms, and especially the headache. This, if severe, shows that a morbid process within the skull preceded the onset; whereas in embolism the intra-cranial condition is normal until the obstructing particle is suddenly transferred from the heart to the cerebral artery. The practical value of this indication is increased by the fact that it is not only a common but a prominent symptom.

Apart from embolism and injury, hemiplegia coming on between twenty-five and forty-five is, I believe, very seldom due to any other cause than syphilis, and its occurrence may justly raise a strong suspicion of this disease, even in a case in which there is no positive evidence of it. But this suspicion is stronger in the case of men than in women, because in women, less rarely than in men, sudden hemiplegia clearly due to an organic lesion sometimes comes on when we can trace no source of embolism and when we can exclude syphilis. Now and then the onset is accompanied by that form of pyrexia which suggests septicæmia, and actual proof of this may be furnished by the characteristic retinal hemorrhages. A softened clot, in some situation, is probably then the most frequent cause of the symptoms, and the hemiplegia may be regarded as embolic. But there are other cases in which the onset is unaccompanied by any symptom to suggest embolism. I have seen several such cases in girls between eighteen and thirty, in whom from their history, character, and life, inherited or acquired syphilis could be absolutely excluded. The hypothesis of thrombosis in a healthy artery, due to some general condition, seems, perhaps, the least improbable explanation of such cases. But if the subject of such a palsy happens to be a girl of the lower classes, especially if she is good-looking, the diagnosis of probable syphilis is not unlikely to be made, and the more readily because we often cannot exclude the risk of infection in the case of unmarried females as we can in unmarried men.

With the advent of the degenerative period of life comes an

enormous accession of difficulty in diagnosis. After the age of forty-five or fifty is passed we can never feel sure that we are not in the presence of the changes in the arteries which cause cerebral hemorrhage or cerebral softening. The difficulty is further increased by the fact that syphilitic disease becomes not only relatively, but absolutely, less frequent, so that the likelihood of it does not help the observer as at an earlier period of life. Hence when it does occur it is more likely to be unsuspected and unrecognised. This is, indeed, one of the chief practical risks of error; for the diagnosis can still be made in most cases, although less surely. The diagnostic indications that are often distinct and important in the earlier periods of life are equally common and equally significant in the later period. The significance of some of them is, indeed, not so strong as in early adult life; but their relative importance is greater, since on them, and especially on those that are still unequivocal, the diagnosis chiefly depends. Their significance is strengthened by a history of syphilis, but this history alone has far less value than at an earlier age. Further, as we cannot exclude syphilis merely because there is no history of it, so now we cannot exclude the degenerative lesions merely because degeneration is not manifest. Hence arises the extreme importance of the diagnostic indications afforded by the mode of onset and by the premonitory symptoms—taken, of course, in combination with the general diagnostic indications that apply to all sudden lesions in late life. The absence of coma, the frequent occurrence of prodromata, or a deliberate development of the palsy, together with the state of the heart, may render hemorrhage unlikely, and the chief difficulty is the distinction from atheromatous softening. In this, as in syphilitic disease, a morbid state of the arteries exists before the sudden onset, and it may cause slight premonitory symptoms analogous to those we have been considering. But headache is not very common, and is never so considerable as it very often is in syphilitic disease. Atheromatous softening, moreover, is essentially a senile malady. Apart from kidney disease, or an early degenerative tendency usually conspicuous, it is not often met with under sixty, and it becomes more frequent as life advances; while the syphilitic lesion becomes more and more rare, till at last it is only to be thought of when special circumstances suggest its possibility.

The application of these principles, varying as it does in detail, I must leave. But I may mention to you an instance which shows very well their use and value, and, by a curious and convenient coincidence, this case, one of the best unverified illustrations of this particular diagnostic difficulty I have ever met with, came under my notice as I was finishing this part of my lecture. Dr. Barnes, of Ewell, asked me to see with him a woman, forty-

two years of age, in whom, two days before, right hemiplegia had come on in the course of a few hours, without loss of consciousness. The face was not affected on the right side, and this fact, with distinct weakness of the left side of the face, diplopia, tingling of the left hand, and frequent hiccough, made it almost certain that the lesion was in the pons. The urine had contained albumen for some years, and now deposited granular casts. In the left eye were the remains of syphilitic choroiditis, and one child had been born dead without traceable cause. For several months she had suffered much from headache, of increasing severity, and had become much stouter.—(*Lettsomian Lectures*) *Lancet, Feb.* 2, 1889, *p.* 207.

11.—ON THE PROGNOSIS OF SYPHILITIC AFFECTIONS OF THE NERVOUS SYSTEM.

By W. R. Gowers, M.D., F.R.S., &c.

Prominent above all the others in prognosis, we must remember two leading principles—First, the dependence of symptoms on the simple processes in the nerve elements, and not on the specific part of the lesion. Secondly, the fact that it is the specific process only, on which our special treatment exerts a direct influence. So the first conclusion that we must seize and hold fast is that treatment can never influence the symptoms directly. The simple processes that cause the symptoms are scarcely at all amenable to direct treatment, and not at all to the specific treatment. Hence the utmost we can do is to try and remove the specific process, and so allow the nerve elements to recover, if they can. Here, then, we see the essential principles that must guide every prognosis. Is the specific process such and in such a stage that we can remove it wholly or partially? Is it to be expected that such removal of it as we can effect will be followed by the recovery of the damaged nerve tissues sufficient in degree and extent to permit the return of function, complete or partial? This is the method by which, and by which alone, in every form and degree of lesion, our prognosis must be obtained. The process thus is simple. Its application is not difficult, but it needs the same exactness, the same attention to every step, that is seen to be requisite in every practical proceeding in connection with these diseases.

The first question, then, is, How far can the specific process be influenced by treatment? Hyperplasia is the great characteristic of visible specificity, and it is this element in the process over which treatment has most influence. Inflammation, even when it is due solely to syphilis, seems to vary much in its susceptibility to influence. Here, however, our vision is limited by the fact that we cannot discern during life how much of this apparent inutility of treatment is due to the lack of influence over the specific element

and how far it is due to the fact that the nerve elements cannot recover. In chronic inflammation it sometimes seems as if we cannot arrest the true specific processes; but in acute and subacute inflammations the facts we can perceive, and the analogy of similar processes elsewhere makes it probable that the second explanation is the true one, that it is the persistence of the damage, and not of the lesion, which causes the persistence of the symptoms.

The first important consideration is certainly the fact that the tissue formation of syphilis is the element that can be influenced with most frequency, with most certainty, and in greatest degree. It is only in the early period of the process, when the tissue is still soft, that it can actually be made to disappear. When it caseates, it may also disappear, although the removal of the degenerated particles is perhaps not due directly to our treatment. But when and where the process of fibroid transformation has set in, it is doubtful whether our treatment does more than the process. This is a cicatricial process: it is a process of healing of the lesion, and there is no evidence that our treatment does more than hasten it. The tissue that is produced lessens in amount whether we treat the patient or not, but this diminution may be only in the process of shrinkage which all scar tissue undergoes, a shrinkage by which the elements occupy less and less space as they change from the original cells or their original form into inert fibres.

In the process of subacute and chronic inflammation, moreover, the effect of treatment through the specific element is largely dependent upon the amount of new tissue formed, and the stage of development which this has reached. Inflammation causes also a direct damage to the nerve elements. This direct damage to the nerve elements is proportioned to the acuteness of the inflammation. In really acute inflammation it is great, and, moreover, it seems to constitute the chief effective elements of this process. Our treatment is only to bring the acute inflammatory process to an end, and if this can be effected speedily enough, there is nothing further for the special treatment to do—there is no new tissue for it to remove. When we have arrested the process of inflammation, all we can do in treatment is to wait while the nerve structures recover, and all that we can do in our prognosis is to endeavour to form an opinion as to whether they can recover or not. But when the inflammation is chronic or when it has lasted long, we have to consider also the tissue formation, the extent to which its removal is possible, the effect which it has produced on the nerve elements, as well as the degree to which they can recover is possible.

These, then, are the chief elements that have to be taken into consideration in forming a prognosis. But, in addition, there is a secondary question, subordinate to the others in actual position, but at least equal to them in importance. This question is, the state of the new tissue in connection with its relation to the nerve

elements. As I have just said, when the fibroid transformation has set in, treatment does not seem capable of removing the new tissue, or doing more than hastening this cicatricial process. But this process involves, as we have seen, contraction of the fibres. If the new tissue merely compresses the nervous structures from one side, this contraction is as effective as absorption in relieving the structures from the damaging compression. But, whenever the new tissue encircles the nerve elements and encloses them, the compression is actually increased by the cicatricial contraction. This, the healing of the syphilitic process, the recovery of the essential syphilitic lesion, means a continuity damage to the nerve structures, and a continuity of the symptoms produced by that damage, and by it alone. After a time, it is true, there is often a further improvement in the symptoms. When the process of contraction is at an end, perhaps even before it comes to an end, the nerve elements seem to be able, in some degree, to accommodate themselves to the new condition of the fibres, and, although greatly narrowed, may yet regain some power of conducting, and often considerable power.

Hence it follows that whenever there is reason to suppose that there is new tissue which has begun to undergo, or which has already undergone, the process of fibroid transformation, and that this new tissue is so placed as to surround either the spinal cord, the nerve roots or nerve fibres, our prognosis must be influenced by the considerations I have just mentioned. In all inflammations that are not actually acute there is this new tissue. If the inflammation has lasted for a few weeks before treatment has been effective, we cannot assume that the new tissue will be removed. The amount of new tissue will be proportionate to the intensity, extent, and duration of the inflammation, of which other indications enabled us to judge; and we must consider how far the position of the tissue is likely to entail this encircling compression. Hence, until we can see what influence treatment has upon the symptoms, our prognosis must be deferred —at least so far as details are concerned. If improvement is absent or slight, or when improvement begins to flag, we must expect that the degree of disturbance of function which then remains will for a time lessen only in slight degree or at a slow rate; that a little further improvement may take place in the course of time by the functional adaptation of the nerve elements to their new condition, but that some amount of the impairment of function is not unlikely to remain. We must recognise also the important fact that when once the early and distinct improvement that follows our treatment is at an end, or even when it has distinctly begun to slacken, it is not likely that any further improvement the case will show will be in any degree the result of antisyphilitic treatment. I believe that these general principles are absolutely true.

I am sure that their recognition in practical work is of the utmost importance. Their application to any individual case will furnish an accurate and adequate prognosis; and, as I said, this application requires rather care than practice, patience than special knowledge. Thus three points in every morbid process have to be considered: the nature of the tissue in the specific lesion, the mechanism by which the nerve elements are damaged, and the character of this damage. We must consider the nature of the tissue to determine the effect our treatment is likely to have upon it; we must consider the mechanism by which the nerve elements are damaged to determine how far the changes we are able to produce in the specific tissue can relieve the nerve elements; and we have to consider the nature of the changes in these nerve elements to determine whether it is or is not likely that they can recover function if completely relieved from the morbid influence. We have seen that it is by the removal of new tissue that is still in the early stage, by reducing the bulk of such tissue when it is exerting compression, and by checking the process of pure inflammation, that our treatment is effective. We have seen that it is when the compression is from one direction that the reduction in bulk of the syphilitic tissue has the greatest effect in releasing the nerve tissues from the influence of the syphilitic process, and that when the new tissue compresses on them from all sides the diminution in its bulk is more than compensated by the constricting contraction of the tissue. A word or two more seems needed regarding the third element—the changes in the nerve elements themselves. In pure acute inflammation, even when due to syphilis, this is the only point to be attended to. In the subacute and chronic inflammation it is secondary to the considerations regarding the new tissue which have just been mentioned. Note, once more, that these changes are simple and not specific, and that it is on these that the symptoms depend. These changes may be the simple breaking up that occurs also in the lesion of pure inflammation, which differs so much from all other processes due to syphilis—the softening of the brain from syphilitic disease of the arteries. Except in this process of necrosis, and in the very rare pure acute inflammation, I do not think you will find any certain instances of change in the nerve elements in specific processes due to syphilis without a production of new tissue. Secondly, we have the effects of compression already mentioned. Simple lateral compression readily arrests function, but it seems to do so by producing alterations in the nerve elements that can be recovered from to a larger extent than is possible in any other form of damage. When the axis-cylinders persist or not, the fibres seem to be able to regenerate even after they have been exposed to such pressure for months. Lastly, in the damage produced by so-called "hyperplastic inflammation," there seems to be both com-

pression by new tissue and also the alterations that result from the inflammation itself, and which we have already considered. The contraction of tissue that encircles the elements keeps up the compression originally caused by its bulk, and hence this, and also the persistence of the inflammatory changes in the nerve tissue, cause the effects of such hyperplastic inflammation to persist long after the activity of the inflammatory process itself is at an end, and even long after the treatment has ceased to exert any influence over the morbid process.—(*Lettsomian Lectures*) *Lancet*, *Feb.* 9, 1889, *p.* 259.

12.—ON THE TREATMENT OF SYPHILITIC AFFECTIONS OF THE NERVOUS SYSTEM.

By W. R. Gowers, M.D., F.R.S., &c.

The general treatment of syphilitic lesions does not come within the limits that I have set to these lectures, and even if time permitted me to make an exception on account of the importance of the subject, I should still hesitate to occupy your attention with that which every student is taught. The few minutes that remain I may best spend in pointing out certain points on which we need to have a far firmer foundation of observed facts than has been supplied, and a more secure hold on certain important truths.

One question on which there is some difference of opinion is as to the respective power of mercury and of iodide of potassium—represented in its extreme forms by the custom of some physicians to give only iodide for the late lesions, and the opinion of others that mercury alone is effective, and that iodide has only the power of bringing into an efficient activity the mercury that may have been deposited and held inert in the various tissues. The only point really at issue, however, is the influence of iodide. I have, on this subject, to range myself with the majority. It seems to me impossible to see much of the true specific lesions of the nervous system, and not to believe that over most of them iodide has a most potent influence. The symptoms of a gumma, for instance, lessen and pass away under the influence of iodide of potassium as speedily and as completely as would seem, *a priori*, to be possible from any agent. I am inclined to think that when a lesion is distinctly influenced by either drug, if this is given freely, the effect of one is as great as that of the other, and that, in most circumstances, I doubt whether it is necessary to follow the iodide with a course of mercury. But this is only an impression; the physician cannot gain from his cases any real trustworthy *conviction*. We need more detailed observations by those who can *see* the influence of the treatment of lesions in the skin and other parts; we need observations as to the relative effect of different kinds of treatment and the time needed for the complete

removal of specific processes. We need details that would be useless for the observer himself, but are essential for us; and we need in such observations careful discrimination, as far as is possible, of the effect of the drug and between changes which result from that effect, but may need time for their full completion. It is very easy for physicians to mistake the slow improvement in symptoms that goes on for a considerable time after the syphilitic lesion has been removed for the slow removal of this lesion.

At the same time the question needs asking, and needs an answer. Are there late syphilitic lesions over which iodide of potassium has no influence, and which yield to mercury? Some years ago this question was impressed upon me by the case of a woman who had a firm mass deeply seated in the posterior triangle of the neck, compressing the lower nerve roots entering the brachial plexus, and causing paralysis of the muscles of the forearm and hand. She presented unmistakable signs of constitutional syphilis, including the loss of almost the whole of the soft palate, which had been destroyed by ulceration several years before. Iodide of potassium was given in large doses for about six weeks, but without the slightest effect on the mass. Perhaps during the following two months it did not get larger, but it certainly did not get less, nor did the pain which was caused by the compression of the nerve roots. Mercury was then given, and as soon as its influence was established the mass began to lessen and the pain ceased, and in a few weeks the neck had resumed a normal state. The lesion was no doubt the chronic syphilitic periadenitis not uncommon in this region. The significance of this case seems clear, but there is one source of fallacy I will mention presently.

I have not met with any case of intra-cranial disease in which there was reason to believe that mercury was successful while iodide failed. In the case of gummata I have found, as a rule, the effect of iodide perfectly satisfactory, as great as seemed possible, and with entire removal of the symptoms, except in cases in which such complete removal could not be expected. Syphilitic inflammation is, I think, better treated with mercury, since this has far more influence than iodide over the process of inflammation irrespective of its nature and cause, but I cannot say that this opinion is based on observations free from sources of fallacy.

With regard to the methods of administration of mercury I have nothing to say. The old method of inunction seems to me to bring the point under the influence of the drug as speedily as it can be done with safety, and with a certainty incomparably greater than the administration by the mouth. I have been deterred from a trial by the hypodermic method, because the published evidence seemed to me not to afford any satisfactory proof of superiority, being destitute of the element of comparison essential to such proof, and because this method seems to afford an oppor-

tunity for psychical influence not free from risk of that which is undesirable. But I would not for one moment suggest that such an influence has entered into the motives or action of those who have used this method.

There are two points in the treatment of syphilitic diseases of the nervous system on which I think a word of caution is urgently needed. The first is regarding the prolonged administration of anti-syphilitic drugs, especially of iodide of potassium. By "prolonged" I mean exceeding from six to ten weeks. I believe that full doses in this time will effect all that it can achieve in the removal of the syphilitic process. Here, as I have just said, we want facts that are visible, numerous, and carefully observed, to guide us in our conclusion. I do not say that the symptoms will have disappeared. It cannot be too firmly remembered that symptoms are due to changes that are not syphilitic, changes in the nerve elements secondary to the syphilitic disease, but so far independent in course that they may persist long after the specific lesion is at an end. Hence the fact that the symptoms have not yet ceased is no indication that the specific lesion is not entirely removed. Here, then, I would range myself with the minority—a minority that is fast growing in size, especially in Germany,—who hold that the long-continued treatment by small doses of mercury or iodide is a mistake, great and dangerous; who hold that treatment of any true specific lesion should be energetic, but should continue only a little longer than is necessary to remove the lesion; repeated it may be after an interval occupied by tonic treatment, or by the other of the two chief drugs. If iodide is continued, as it often is, during many months (and much more, as it sometimes is, during years), there is a danger that the system tissues of the patient may become so accustomed to its presence that the drug may no longer hold in check the syphilitic processes. Probably we may still influence the lesions by increasing the dose, but this process must have limits in practice, if not in theory. Such prolonged and augmented treatment may do definite injury to the patient's health, and even then fail to effect the desired object. If the poison is an organised virus, we might *a priori* expect this result. By long-continued, gradual alteration in the conditions, low organisms, as Dallinger has shown in his remarkable experiments, can be made to endure influences that would at first be fatal to them. By slowly raising the temperature, they will not only live but flourish at a degree of heat which, had it not been for their acclimatisation, would have killed them in a few minutes. But the question is not one in which we can be guided by theory, far less by an analogy, possibly remote. There is, moreover, a positive danger in this method. It is also great in the practice to which I referred at the beginning of the lecture—that of repeated courses of energetic treatment to remove residual

symptoms that cannot be thus removed, because they do not depend on any residual specific process. I will mention this shortly.

The test of experience alone can say whether this risk of loss of power is imaginary or real. But, at the same time, the fact does not need for its proof the evidence of accumulated experience or numerous observations. A single clear instance will suffice to establish it, and no number of negative instances would disprove it. We know how erratic the course of syphilis is, and how great must be the variations in the state and tendency of the virus in the system. In one case, if the energy of the disease is subdued, it is for a long time tranquil, while in another the tendency to fresh development soon reasserts itself. Hence it may readily be that a series of cases may lead to a delusive confidence in the safety of a course of treatment which is, nevertheless, now and then fraught with danger.

The following instance, I think, proves that the danger is not imaginary. Many years ago, a man came under my treatment with symptoms of local chronic meningitis about the pons. Ten grains of iodide of potassium were given, and the symptoms rapidly lessened. Slight residual symptoms, however, remained, for which iodide was continued, and he took it regularly for about four months. At the end of that time some obscure cerebral symptoms developed, the syphilitic nature of which was doubted, because they had developed in spite of the iodide. He was admitted to the Hospital, and the iodide was continued and slightly increased; but the symptoms rapidly developed, spinal symptoms were superadded, and in a few weeks he died. Post mortem we found the remains of local syphilitic meningitis at the base, as had been suspected, and also a syphilitic gumma in the cerebral hemisphere, and another in the spinal cord. Here, then, we had clearly a new development of that syphilitic lesion over which iodide has most influence, although the patient was at the time, and had been for a long time before, continuously taking the drug.

I have seen other instances, both with iodide and with mercury; but this case impressed me so as to preclude the occurrence of fresh illustrations in my own practice, and I do not care to adduce instances not observed by myself throughout. Especially in early syphilis, however, I have been satisfied that the virus may resume activity during the continuation of mild mercurial treatment. Here is a source of a possible fallacy in the case I mentioned just now, in which iodide had no influence on the syphilitic process in the neck. It is possible that the patient had been taking iodide for a long time before she came under my care. There is no evidence of it, but the point was not investigated, and must remain doubtful.

I would add only one other remark. If it is true that we cannot cure syphilis, it is most important to consider how it can best be

kept in check. This is why the fact of incurability, if true, is so important. A mistaken belief in curability may dangerously hinder attempts at prevention. If no present treatment can prevent future developments, then it is wise, whether these come or not, to anticipate them. I think a custom sometimes recommended is prudent—that every syphilitic subject, for at least five years after the date of his last symptoms, should have three weeks' course of treatment twice every year, taking, for that time, twenty or thirty grains of iodide a day. If this practice were adopted generally, is it not reasonable to anticipate that grave lesions would be much more rare?—(*Lettsomian Lectures*) *Lancet*, *Feb.* 16, 1889, *p.* 314.

13.—ON THE CHANGES IN THE PERIPHERAL NERVES INDUCED BY ALCOHOL.

By Joseph Frank Payne, M.D., Physician to St. Thomas' Hospital.

Although the actual changes produced by alcohol in the nerves have only lately been observed, the symptoms now referred to them have been longer known, though referred originally to a lesion of the spinal cord. Dr. Wilks was, I think, the first in this country to give a clear description of these symptoms under the name of alcoholic paralysis.

Here I must say a word or two about the clinical aspect of the nervous disease, especially as it is as yet not universally recognised by the profession. The earliest symptoms are disturbances of sensation, and, in the first place, hyperæsthesia. There may be peculiar sensation (paræsthesia), such as numbness, tingling, or feeling of pins and needles, or burning, and sensations of boring and stretching. There may be actual pain, but not usually continuous. Later on, all these disturbances give place to anæsthesia, which is often observed to be present in particular areas. Difficulty in locating sensation and retardation in the transmission of sensation have also been described. All these symptoms are evidently referable to cutaneous nerves, but the deeper nerve trunks and muscles are often tender on pressure. The special senses are very rarely affected. If we consider the phenomena relating to muscles, we find a very prominent symptom, and usually an early one, though sometimes absent, is inco-ordination and loss of muscular sense. The knee-jerk is lost at an early stage, and Dr. Gowers refers this phenomenon, apparently with justice, to loss of all the muscular sense.

All these phenomena constitute the condition of alcoholic ataxia, which may come on before there is actual paralysis of motion, and may remain, as I can state from personal observation, when actual paralysis, once present, has passed away, though it is probably always accompanied by muscular weakness. It is distinguished from tabes dorsalis, or what is called locomotor

ataxia, by several characters, especially by absence of all symptoms connected with the pupil of the eye or with the sphincters. Next, if the affection continue and become more severe, we have the stage of actual motor paralysis. In this there will be entire loss of motor power in the muscles, sometimes quite local, sometimes in all four limbs. The paralysed muscles soon lose faradic irritability, and become impaired in galvanic irritability.

Now I think it is quite clear that the symptoms, of which the above is a bare outline, might be referred to injury of peripheral nerves. Take first the case of the cutaneous nerves, the function of which is mainly efferent or sensory. The first result of slight injury to a nervous structure, if it did not pass a certain degree of intensity, is to cause its substance to be more easily decomposed—that is, to produce an apparent, or, at least, temporary exaltation of function, which, in a sensory organ, is expressed as hyperæsthesia. A continuance or higher degree of the same injury will produce total loss of conducting power, or anæsthesia. Whether this injury affects nerve endings, or nerve trunks, or both, is a question not yet entirely decided. It is evident that paræsthesia or irregular sensations may also result from injury to sensory nerves.

Now let us consider the case of the muscular nerves (a term which I prefer to that of motor nerves, at least for the present purpose). These nerves have a twofold conducting power : one efferent, transmitting motor impulses; another afferent, transmitting the muscular sense. The sensory or afferent function is assigned to special fibres, which are said to have a special origin. This statement my knowledge is quite inadequate to enable me either to confirm or reject; but for the present purpose it is enough that there are fibres having this function. It would seem as if these fibres were affected by a slighter form of injury than that which is necessary to cause actual motor paralysis. At all events, an injury of these fibres would produce all the symptoms of ataxia, and an injury of the efferent motor fibres would cause paralysis.

Certain other symptoms which sometimes complicate alcoholic paralysis, are explainable by similar injury of other nerves. One is acceleration of the pulse. This is very notable in many cases. In one of my own, which ended in recovery, the pulse was for a long time not less than 140, independently of occasional fever, and still more rapid pulses have been observed. In a case of a confirmed drinker, whose pulse was usually about 180, and who died of thrombosis of the portal and mesenteric veins, with hardened liver, I found after death nothing to account for the rapid action of the heart. It is clear that a slight degree of injury to the vagus nerve would, in the absence of other causes, be sufficient to account for this acceleration of the heart; but when this observation was made the connection was not thought of.

Paralysis of the diaphragm, from affection of the phrenic nerve, may also occur.

It would not be enough to show that nerve changes would account for these symptoms. It must be shown that no other cause accounts for them, and that the nerve changes actually exist. The only other conceivable cause of all the symptoms described would be an extensive lesion of the spinal cord, affecting both motor and sensory tracts. Such a lesion is not known to occur in these cases, and has in many cases been proved not to be present. Moreover, the supposed nerve lesions have been, in many instances, found in the mixed nerves, including both cutaneous and muscle nerves. In one instance, at least, similar changes have been detected in the trunk of the vagus (Finlay) when the pulse was 160. It is to Lancereaux that the credit belongs both of suggesting this explanation and of establishing its truth. I will not take up the time of the Society by quoting observations of peripheral neuritis in cases of alcoholic paralysis; but I will refer to those published by Lancereaux, Reginald Thompson, Dreschfeld, Duckworth, Finlay, and others in various publications. More especially in the *Transactions* of our own Society, Dr. Hadden (vols. xxxvi and xxxviii), Dr. Hale White (vol. xxxvii), and Dr. Sharkey (this year) have described specimens having the same significance. I will only venture to speak of one point in the pathology of what is called neuritis, and this with reference to other forms of the same lesion, such as diphtheritic and the various toxic forms.

The changes described in the nerves thus affected come under the heads parenchymatous and interstitial. The first include cloudy or granular appearance of the nerve fibres, segmentation of the myeline and collection of it in round and oval masses, sometimes absence of the axis-cylinder, and other similar changes; in fact, all the evidence of degeneration, ending in necrosis.

The interstitial changes are seen in the perineurium or endoneurium, either diffused, or mainly external. These tissues may show an increase in the number of nuclei, or infiltration with leucocytes, and are generally thickened. In some cases actual increase of connective tissue has been described. These changes are what are usually described as inflammation leading to hyperplasia.

Very generally both these changes are found together, but sometimes one group of changes predominates, sometimes the other; and thus the lesion is sometimes described as degeneration, sometimes as inflammation, and there has been a sort of controversy as to by which name it should be called, and which should be regarded as the original or primary change. I would submit that the parenchymatous and interstitial lesions are both produced by the direct action of alcohol, and illustrate the general law that when a toxic or injurious agent affects a mixed organ of the

body, it is likely to produce degeneration or necrosis of the parenchymatous elements (nerve, muscle-fibre, epithelium), and what is generally called inflammation (either of the constructive or suppurative form) in the connective tissue, just as in the liver. This does not exclude the possibility of there being a parenchymatous neuritis, such as has been observed in experiments on animals by Ranvier and others; in which there would be formation of new nerve fibres. But as the nerves have never been removed during life from cases recovering, but only after death from fatal cases, in which there was presumably no repair, the nerve fibres show pure degeneration or necrosis.

It is also to be remembered that the change found in certain parts of the nerves may be a secondary degeneration, caused by interruption of the nervous currents by lesion of the nerve at another point. But when interstitial change and nerve degeneration are present, it is not necessary to suppose that the nerve fibres suffer secondarily, being compressed by the hyperplastic connective tissue. On the contrary, there are instances in which the nerve degeneration must be the primary change, and the connective tissue change a consequence of it. For instance, this must be the case in the so-called secondary degeneration of conducting tracts in the spinal cord or nerves, in consequence of injury to the ganglionic tissue with which they are connected. It is clear that the break of communication will at first affect only the nerve fibres, and not the connective tissues surrounding them. Changes in this tissue, that is to say, sclerosis, perineuritis, or interstitial neuritis, must therefore be a consequence of the nerve atrophy. How this leads to connective tissue proliferation is a difficult question. But I have elsewhere attempted to show that it may be partly a consequence of the diminished resistance which favours overgrowth of the tissue which remains; and secondly, that when the nerve fibres are dead, the connective tissue deals with them as with a foreign body. It tends to form a barrier of fibrous tissue around them as if to encapsulate them.

In ordinary neuritis we could only prove which was the initial stage of the disease by examining specimens at different stages, which has not been done, so far as I know. Hence, since we do not know the necessary order of the changes, it is more reasonable, on the whole, to regard them as simultaneous results of the action of alcohol, and to speak of the whole process as alcoholic neuritis.

I can only just allude to the remarkable fact that similar nerve-changes have been demonstrated in chronic arsenic-poisoning, in lead-poisoning, in paralysis from bisulphide of carbon, and in the disease called kakke, while there is great reason to think that the nerve changes of diphtheria and other specific diseases are due to the same morbid process. All these will be forms of multiple peripheral neuritis.—*Brit. Med. Journal, Dec.* 15, 1888, *p.*1328.

14.—ETIOLOGY AND SYMPTOMS OF FRIEDREICH'S ATAXIA.

By J. P. Crozer Griffith, M.D., Assistant Physician to the Hospital of the University of Pennsylvania.

[The following is a brief abstract of an exhaustive paper on this disorder, based on an analysis of 143 cases collected and tabulated.]

Friedreich's ataxia is essentially one of the hereditary diseases. Direct similar inheritance of the disease itself, or of some form of ataxia, is reported in only 33 cases in 16 families of brothers and sisters, and most of these are very doubtful examples of it. The Polymorphic inheritance—in which there have been other neuropathies, alcoholism, tuberculosis, syphilis, consanguinity, etc., in the family—has in some respects exercised a much more powerful influence in the production of Friedreich's ataxia. Friedreich thought that alcoholism had a strongly predisposing action, since it was present in the parents of 6 of his 9 cases; but its influence has been greatly overrated. Syphilis is mentioned as possibly present in but 2 families.

The predisposing influence of age in Friedreich's ataxia is shown by the fact that in over one-quarter of reported cases the first symptoms were perceived before the age of 6 years; and in over one-half before the age of 11 years. In at least 15 cases the disease began in infancy, and in not more than 25 did it develop after 16 years of age. The disease has attacked rather more of the male sex.

The influence of acute, and usually febrile, diseases in precipitating the onset of Friedreich's ataxia is seen in 20 cases. As a rule the symptoms of the nervous affection appeared immediately on recovery from the acute disease, but in a few instances their development was delayed so long that the causal relation appears doubtful.

The disease usually begins with weakness and unsteadiness of the lower extremities, and an oscillating, staggering gait, with frequent falls. The average lapse of time, before the upper extremities became ataxic is 6 years, as far as statistics allow of calculation; but the range of variation is very great. Ataxic movements of the head and trunk may appear with the affection of the arms or later. The appearance of bulbar symptoms—the affection of speech being usually the first—averaged only $1\frac{1}{2}$ years later than the incoördination of the arms in 31 cases. As the disease advances there may appear more or less paralysis, muscular atrophy, talipes and other contractures, curvature of the spine, and, possibly, affections of sensation. The patient may become unable to walk, and speech may be almost unintelligible. Finally, death ensues from asthenia or, oftener, some intercurrent disease.

Symptoms.—Motor ataxia of the lower extremities is directly stated to have been present in 128 cases, and in others, it is as directly implied. The incoördination was increased by closing the eyes in 34 cases, and not increased in 19. The gait is only in a

few instances described as like that of tabes. By far more characteristic of Friedreich's ataxia is an "oscillating" gait; "like that of a drunken man," as it is sometimes described. Ataxia on motion of the upper extremities is reported in 111 cases, in 21 of which it was increased by closing the eyes, and in 26 not increased. The incoördination is usually very well marked, so that simple as well as more delicate movements become almost impossible. Prehension is often peculiar, the hand being spread like a claw.

Static ataxia, the ataxia of quiet action, the force required to hold any part of the body quiet when unsupported, is claimed by Charcot to be characteristic of Friedreich's ataxia, and absent in tabes. Statistics show that this author and Ormerod are correct in stating it to be one of the later symptoms, and quite common in advanced cases, though it is probably oftener absent than present. It may be seen in athetoid movements of the hand, or as slow, waving motions of the arms when held outstretched, or even as choreiform movements. Static ataxia of the head is quite frequent; shown by an irregular oscillation, either constant or only when the patient is under some excitement. A nodding of the head is sometimes seen; "like one going to sleep," as Friedreich has described it in one of his patients. Similar ataxic movements of the trunk are reported in a number of cases.

Tremor of some part of the body is found referred to in 8 instances, but is probably in most of them to be attributed to static ataxia.

Choreiform movements, referred to in 17 instances, are likewise, as a rule, only the evidences of static ataxia; being recognised by most reporters as such. They have usually been seen in the limbs, but in 6 cases, grimaces and twitchings of the face are alluded to.

Spasmodic contraction of the muscles is reported in 21 cases. These occur usually in the lower extremities when the patient is sitting or lying in bed, and may or may not be painful.

Paralysis is a common feature, though more usual in advanced cases. It is stated to have been present in 56 patients, and undoubtedly occurred in many others. The so-called paralysis early in the disease is generally merely a manifestation of incoördination. The rate of progress and the degree of paralysis are very variable.

Inability to walk without crutches or assistance from some person developed in 54 instances. It depends oftener on incoördination than on paralysis, since in 10 of the cases it is said that there was no paralysis, and the designation was certainly wrongly applied in many of the remaining. Some patients had never walked; while others retained the power for over 20 years.

Contractures are usually among the later symptoms, and are chiefly represented by talipes. This was present in 27 cases, and was of various kinds, though usually equinus and equino-varus. Dorsal flexion of all or of some of the toes is reported in a number of in-

stances. Contractures of some of the fingers or of the hands or arms are very exceptionally present. Curvature of the spine, usually lateral, and considered by Rütimeyer to be a form of contracture, developed quite frequently (57 cases) as the disease advanced; and though it has in a few instances been observed before other symptoms appeared, its occurrence may have been accidental. Electrical contractility has not been sufficiently studied to reveal anything of moment.

The abolition of the patellar reflex is a very early symptom, as it is a very constant one. The abolition does not, however, always occur. Exaggeration does not necessarily exclude the presence of Friedreich's ataxia, since 2 of the cases exhibiting it belong to 2 of the most typical family groups of the disease. The knee-jerk will not be abolished unless the lumbar enlargement be involved, and it is easily conceivable that this involvement might fail to occur in un-undoubted instances of the affection.

The cutaneous reflexes were usually normal, as far as tested; but sometimes diminished, and rarely increased.

Of trophic symptoms, the most important is muscular atrophy, which is comparatively unusual, even when paralysis is decided. Other trophic changes occur with the greatest rarity, and are possibly accidental.

Sensory symptoms are rather noted by their insignificance.

Affection of speech is one of the most characteristic of the bulbar symptoms. It is reported in 107 cases, and would doubtless have developed in many or all of the remaining. It is frequently characterized by a jerky, moderately rapid articulation, interrupted by sudden and irregular pauses, often between the syllables—a variety which Friedreich described as "ataxia of speech." Speech may be typically scanning, or simply slow, or confluent, etc., and may become quite unintelligible.

The tongue not infrequently (24 cases) exhibits a fibrillary tremor or, less often, a more general twitching or curling. Mastication and deglutition are only exceptionally interfered with. There was difficulty in retaining the saliva in the mouth in a few instances. The face has often an expressionless appearance, giving the false impression of deficient intellect.

A characteristic symptom is nystagmus, which appeared in 56 instances, and would have doubtless been seen later in many others. It is less common than the affection of speech, and develops with or later than it. There are only 6 cases reported in which nystagmus was present, without mention of difficulty of articulation. The form is always "ataxic nystagmus," as named by Friedreich; i.e., appearing only when the eyes are fixed upon an object. "Static" or ordinary nystagmus is mentioned in but 3 instances.

The intellect is reported as possibly weakened in 21 instances,

but in most of these the affection was more than questionable. In only a few cases does there appear to have been any actual mental involvement, and the causal relation of the disease to this is very doubtful. Visceral and secretory disturbances are usually slight, possibly accidental.

In the twelve cases on which autopsies have been made there has been found no change in the brain (excluding the medulla) connected with the disease. The medulla was atrophied in 1 case and the cord smaller than normal, throughout or posteriorly, in 11 cases. Spinal meningitis was present in 10 cases, in 6 of which it was limited to the posterior portion of the cord. There was thickening of the ependyma of the fourth ventricle in 2 instances. On microscopical examination, there was found slight extension of the posterior sclerosis to the medulla in 5 or more cases. The cord exhibited sclerosis of the posterior columns in all 12 patients. The lateral pyramidal tracts were very uniformly sclerosed in 11 cases; the remaining one being the first case of Friedreich's, in which the more imperfect methods of microscopical examination then in use may have failed to reveal slight changes. It is important to observe that in 7 of the 11 there was a narrow strip of healthy tissue between the diseased portion and the posterior horn. The direct cerebellar tracts appear to have been involved in 7 cases. A peripheral zone of degeneration passing forward from this tract was seen in parts of the cord in 5 instances. The anterior pyramidal tracts were sclerosed on one or both sides to some extent in 6 cases. The columns of Clarke were degenerated in 8, and probably in 9 instances. The posterior nerve-roots were more or less diseased in all the cases. The histological changes in the cord consist in an overgrowth of neuroglia at the expense of the nerve-fibres. A finely fibrillated or granular substance develops, and corpora amylacea are frequently very numerous.

There seems to be no reason now to deem Friedreich's ataxia other than a distinct disease, intermediate clinically between tabes and disseminated sclerosis, or, as placed more exactly by Gowers, between the former and ataxic paraplegia.—*American Journal of Medical Science, Oct.* 1888, *p.* 380.

15.—ON ERYTHRO-MELALGIA.

By John E. Morgan, M.D., Professor of Medicine, Victoria University; Physician to Manchester Royal Infirmary.

[The first of Dr. Morgan's cases, which appears to have been an unusually severe one, was treated to a successful issue by means of the injection of morphia and atropine into the soles of the feet, the injection being performed twice daily for about three weeks. The condition had existed for about a year and a half, and followed closely upon a severe attack of gonorrhœa. The narratives

of Dr. Morgan's cases, which seem to have been of a typical character, are not reproduced here.]

The *American Journal of the Medical Sciences* for July, 1878, contains a paper by Dr. S. Weir Mitchell, in which he describes a rare vaso-motor neurosis of the extremities. To this disorder Dr. Mitchell has given the name of "Erythro-melalgia," a Greek compound signifying an affection of the extremities, accompanied by redness and pain. The symptoms are characteristic, and usually commence with pain in one or both feet—often in the ball of the foot or of the great toe, or in the heel. Occasionally this pain involves the dorsum of the foot, and in rare cases the leg; more often it is confined to one or both soles. At first it is usually induced by any excessive exertion in standing or walking; but after a time it is experienced whenever the upright posture is assumed, or even when the feet merely hang down. The pain is usually of a burning character, and as the disease advances is described as intensely acute, often coming on in agonising paroxysms. It is relieved by the horizontal position and by cold, but is invariably aggravated by standing and walking, or by warmth, as by sitting near the fire, or even by the heat of the bedclothes. It is worse in summer than in winter. Pain, however, is not the only symptom referable to the feet; whenever any walking exercise is taken the parts flush, and in severe cases assume a dusky-red colour. Dr. Mitchell remarks that he has seen two cases in which the disorder, in its later stages, was associated with distinct evidence of spinal disease, while in one the hands were similarly affected. Dr. Sturge likewise, some years ago, reported an interesting case of this affection to the Clinical Society of London, in which, in addition to the foot symptoms, there was, after a time, wasting of the right leg and thigh. Dr. Mitchell looks upon the disease as peculiarly intractable, and seldom amenable to any form of treatment. In many cases the symptoms remain unchanged for years, and in rare instances become gradually worse. In the paper to which I have referred, Dr. Mitchell has collected sixteen cases which correspond more or less closely with the description here given. Twelve of the sufferers were men and four women. The average ages of the men, where age is stated, was thirty-two, and of the women forty. In the great majority of the cases, the symptoms seemed to follow either some lowering constitutional disease, or they were ascribed by the patients to long-continued exertion in walking or standing, or to prolonged exposure to wet and cold. In addition to these cases collected by Dr. Mitchell, well-marked examples of the disease may be found in English and foreign medical journals and periodicals, though they do not materially extend our knowledge either of its etiology, its symptoms, or its treatment. During the last three years, five cases closely answering to the description given by Dr. Mitchell have

come under my observation. Four of the patients were inmates of the Manchester Royal Infirmary, and one was seen in private practice. Two of these cases I propose to describe somewhat in detail, as the symptoms in each were highly characteristic, and appear to me to shed some light on the true nature of the disease.

The affection is, it will be admitted, one of very considerable interest, and in some of its features altogether unique. As Dr. Mitchell remarks, it is a highly intractable disorder, the great majority of the cases remaining more or less stationary for ten, twenty, or thirty years; while in others the upper portions of the limbs affected gradually become involved, and occasionally the spinal cord itself is affected. In three of my cases the internal plantar nerve was the part solely implicated. Along the course of this nerve there were certain well-marked painful spots (points douloureux). One of these points was situated at the inner side of the ankle, where the posterior tibial nerve comes into close contiguity with the posterior tibial artery; another on the inside of the foot, where the internal plantar nerve crosses the common tendon of the flexor longus digitorum muscle; and others were situated at the inter-digital clefts, between the three inner toes, at that portion of the foot where the internal plantar divides to form the digital nerves. At all these spots, even when the patient was perfectly comfortable in the horizontal position, pain was induced by somewhat firm pressure. Dr. Mitchell, who has very ably discussed everything bearing on this affection, and to whom we are primarily indebted for what we know regarding its etiology and symptoms, speaks of it as "an unrecognised type of spinal or cerebro-spinal disorder." He considers "the vaso-motor phenomena either as caused by the implication of the vaso-motor centres, or as due to a reflex affection caused by the pain or by the implication of the central organs, disease of which gave rise to pain." No doubt in some respects it does resemble both a neuralgia and neuritis, still there are important points of distinction which separate it to a greater or less extent from both these affections of the nervous system. In the first place, it is very rare to find neuralgia so symmetrical in its distribution as many of these cases are shown to be. It seldom attacks exactly corresponding parts of the two extremities with equal intensity, the pain in neuralgia being usually unilateral. The causes, also, which induce the paroxysmal attacks differ materially: neuralgia as a rule is aggravated, if not actually excited, by exposure to wet and cold; it is certainly not invariably increased by warm weather and warm clothing, as were the cases I have described. Again, although in neuralgia we frequently observe considerable congestion of the parts affected—as, for example, in "tic douloureux,"—still in these cases the congestion is of an active character, accompanied by heat and by a kind of rose-red blush. In erythro-melalgia, on

the other hand, the congestion, especially in the later stages of the attack, is rather of a passive character; often there is no increase of temperature, and the parts affected look rather purple and livid than actually red. Again, although it is true that in cases of neuralgia we frequently observe both vaso-motor disturbances and abnormal secretions, still those symptoms are not so constant an accompaniment of the attack, nor are they so pronounced as in the affection I am discussing. Further, in all varieties of neuralgia, the patient has usually suffered from attacks of pain in various other parts of the body, while very few cases of neuralgia prove so intractable as this well-nigh incurable disorder. If, then, the objections to looking upon these cases as examples of neuralgia be manifold, can they more appropriately be deemed, not a functional, but an inflammatory, affection of the peripheral nerves—in other words, a neuritis? In answer to this question, it must be admitted that some notable symptoms usually observed in neuritis are seldom associated with this affection. Sensation, for example, is rarely perverted, or even blunted. Indeed, in the notes of some of my cases it is distinctly stated that there was not at any time either hyperæsthesia or paræsthesia. Then, again, there is rarely any paresis or fibrillar twitching of the muscles supplied by the affected nerve. Thus, in one of the cases cited by Dr. Mitchell—a case originally recorded by the late Dr. Graves—that acute observer remarks: "It is curious that the long-continued derangement in the circulation of the lower extremities, and the extraordinary pain this patient experienced daily for six years, did not produce any paralysis or any diminution of muscular power." Although, however, there is neither muscular weakness nor perversion of sensibility, still there are other symptoms which we are accustomed to associate with peripheral neuritis. Thus pressure over any part of the affected nerve invariably occasions pain of a more or less severe character, and this pain can be induced not only during the exacerbations (as is so frequently noticed in neuralgic attacks), but even during the remissions, when the nerves are in a state of painless repose. Furthermore, the pain is constantly increased by any change of posture which involves the stretching or tension of the nerves. Moreover, in several of the cases to which I have alluded, reference is made to an ascending neuritis observed in the later stages of the disorder, wherein the inflammatory changes seemed to travel upwards, and in some cases actually involved the spinal cord itself. If, however, the disorder must be looked upon as a neuritis, it is evident that it is a form of neuritis in which only certain parts of the nerve—probably the sheath—are involved. This affection is, in fact, a peri-neuritis rather than a parenchymatous or interstitial neuritis. Such forms of neuritis are occasionally observed in cases apparently due to toxic or infectious influences, notably where the system is affected

by such disorders as syphilis and rheumatism. Dr. Ross, in his work, to which I have already referred, seems to think that the cases of obstinate pain in the soles of the feet described by Dr. Elliotson as following gonorrhœal rheumatism really belong to this category. In one of my cases the patient had experienced a severe and somewhat protracted attack of gonorrhœa: Dr. Dreschfeld's patient, also, had at one time suffered from the same complaint. Taking the cases of erythro-melalgia which have been recorded by various writers, it may be stated generally that the great majority of the patients, in detailing the history of the diseases from which they had previously suffered, specially alluded either to rheumatism or syphilis, or gonorrhœa, or gout, or some variety of fever. It would seem, therefore, that these disorders engender within the system certain septic changes which specially predispose it to the occurrence of some such form of peripheral neuritis as we here observe. From the considerations here urged, we are probably justified in believing that the paroxysms of pain in these cases are due to a peri-neuritis dependent on a cachectic taint in the system, while the vaso-motor phenomena are due to a reflex irritation starting from the affected nerves, and thence transmitted to those vaso-motor centres in the cord with which the experiments of Goltz have made us acquainted—an irritation which, if prolonged, we might not unreasonably expect to be followed by vaso-motor paralysis.—*Lancet, Jan.* 5, 1889, *p.* 10.

16.—ON HYSTERICAL MOTOR AFFECTIONS OF THE VOCAL CORDS.

By James B. Ball, M.D., M.R.C.P., Physician to the Throat Department, West London Hospital.

The vocal cords, forming as they do the greatest part of the boundary of the glottic aperture, and being subject to variations of position and tension, under the control of various muscles, are concerned in two important functions—viz., respiration and phonation. In respiration, as the air passes to and fro, the cords recede from each other, widening the glottis, during inspiration, and approach towards each other, narrowing the glottis, during expiration. In phonation the cords are closely approximated and made tense. In accordance with these two functions of the glottis, the motor disturbances of the cords met with in hysteria may be conveniently considered. Through perverted action of the muscles which abduct and adduct the vocal cords, the glottic aperture may be so narrowed as to offer an impediment to the due passage of the respiratory currents, causing dyspnœa, or through perversion of these same muscles, or of those which regulate the tension of the cords, an impediment is offered to normal vocalisation, causing dysphonia or aphonia. Phonation is more frequently affected than respiration. Loss of

voice is, indeed, a common and familiar hysterical symptom. Nor is it surprising that the voice, which is the principal channel for the expression of the emotions, should be frequently affected in a disease like hysteria, so largely dependent on emotional states. Loss of voice in hysteria is sometimes merely voluntary, the patient, owing to a general hyperæsthetic condition, habitually speaking in a whisper, although able to phonate. More often, however, there is real inability. The onset of aphonia is usually sudden, and often follows some psychical excitement. The loss of voice may be complete, the patient being unable to speak other than in a whisper; or the voice may be merely weak, rough, or hoarse. In some cases the loss of voice is intermittent, periods of complete aphonia alternating with periods of normal or impaired voice. The voice may come back as suddenly as it went, and not unfrequently too under the influence of fright or sudden emotion. During sleep the completely aphonic patient may cry loudly out in a natural voice. A sound of perhaps normal loudness will generally, though not always, accompany a sneeze or a cough, and this whether the cough be a voluntary or a reflex act. When excited to laughter, the patient may laugh with an audible vocal sound. More striking still is the fact that the patient who cannot utter a sound in speaking may be able to sing perfectly well. In the case of a young lady with marked hysterical aphonia, whom I saw some time ago, and who had been unable to speak or sing for some months, the power to sing returned suddenly on hearing a younger sister making a poor attempt at one of her favourite songs. The patient pushed her young sister from the piano and sang the song herself. After this she could always sing, but the speaking voice did not return for several weeks. In exceptional cases the patient may be unable to speak even in a whisper, not being capable of performing the necessary movements by which articulation is effected. Merely a vague movement of the lips takes place on attempting to speak. The laryngoscopic appearances of the movements of the cords, in the forms of aphonia above mentioned, though somewhat variable, are, on the whole, characteristic. Imperfect approximation of the cords is the constant feature. In a marked case, on the patient's attempting to phonate, the cords remain perfectly immovable during the attempt, or approach each other only slightly, all the adductors more or less refusing to act; or the cords may approach each other more or less perfectly in their anterior two-thirds, and leave a triangular space open behind, the transverse arytenoid muscle not acting; or an elliptical space may be left between the approximated cords, indicating imperfect action of the tensor muscles. In some rare cases a different state of things exists.

Passing now to the respiratory troubles, or laryngeal dyspnœa of hysterical origin, the first form to be mentioned is that sudden

closure of the glottis which is complicated with a general hysterical convulsion, and causes complete arrest of the respiration for several seconds. It may terminate with a loud stridulous inspiration. Such a closure of the glottis may entirely replace a general hysterical convulsive attack. This form need not be dwelt on further. More chronic and less complicated forms of glottic constriction are of greater interest. In a common type of the malady the attack of dyspnœa occurs suddenly, perhaps after some emotional excitement. Inspiration and expiration are loud and stridulous, inspiration being generally the louder, and sometimes having a crowing character. At times the dyspnœa increases and may present most urgent symptoms. The stridor, cyanosis, and muscular action attest the severity of the struggle for breath. The breathing is often very hurried, hysterical rapid breathing, in that respect contrasting with the measured, laboured breathing of organic laryngeal obstruction. Very often the voice is weak, or complete aphonia may exist. In other cases phonation is good. The dyspnœa may persist with remissions and exacerbations, sometimes with complete intermissions for days, weeks, or months. It ceases entirely during sleep. In certain cases the dyspnœa is purely inspiratory, expiration being quiet and easy. In this form it sometimes happens that the dyspnœa occurs only, or chiefly, on exertion or excitement—that is, when the respirations are more deep than usual. In some patients the attacks of stridulous breathing are of a more paroxysmal character. At varying intervals of minutes or hours, attacks of stridor and more or less dyspnœa occur, inspiration here also being often loud and crowing. After a few stridulous respirations the attacks cease, to recur again at varying intervals. The paroxysms occur without apparent cause, or may be excited by emotion, sometimes by coughing or swallowing. Many other variations will be met with in hysterical stridulous attacks. In the case of a girl aged thirteen, presenting other hysterical phenomena, whom I saw a short time ago, the attacks at the period I saw her had a very peculiar character. Each attack was preluded by facial twitchings, and then came three or four extremely loud inspirations, which were in reality loud piercing inspiratory screams, and were followed by a cessation of respiration for some seconds. The whole attack was attended with marked and alarming symptoms of dyspnœa, so that the propriety of performing tracheotomy to prevent a fatal accident during one of these attacks had been very naturally under consideration. Laryngoscopic examination in ordinary cases of hysterical stridor shows the vocal cords more or less closely approximated to the middle line during inspiration and expiration. If the mirror be kept in position some time, the cords will be seen often momentarily separating and then closing up again. In some cases the cords will be seen to approach each other during inspiration and

separate during expiration, the exact reverse of the normal movements; but the extent of the closure and separation is by no means regular, and varies with successive respirations. These are the cases, above mentioned, in which dyspnœa and stridor attend inspiration alone. In very rare cases the cords are said to present the appearance of bilateral paralysis of the abductors of the glottis. A narrow cleft only exists between the cords, which is still further narrowed on each inspiration. I have never seen this condition in hysterical stridor.

There is one other affection that must be mentioned in this connection, although here the glottic closure is complicated with spasmodic action of the expiratory muscles. This is the affection known as hysterical cough. The cough varies much in character in different cases, but is mostly dry, loud and barking, or shrill, or of metallic quality. It is often of a short rhythmic character, and may be almost incessant; or it may occur in paroxysms, and in some cases these paroxysms tend to recur at certain periods of the day. Hysterical cough may be associated with whooping inspirations and signs of dyspnœa. The cough is intensified by emotional causes, and is apt to be worse when people are present than when the patient is alone. It ceases during sleep. Laryngoscopic examination gives negative results.

The preceding account of the motor troubles of the vocal cords in hysteria does not pretend to be exhaustive. It has only been attempted to indicate the leading features of the chief affections. The symptoms having more or less resemblance to those of other diseases, it will be well to briefly summarise the grounds upon which a diagnosis of their hysterical character will be made. There are, in the first place, those general considerations which apply to the diagnosis of every hysterical malady—such as the age, sex, habits, and physical, mental, and emotional condition of the patient. Hysterical affections of the cords, like other hysterical affections, occasionally occur in girls before puberty, as well as in men and boys. The presence of other undoubtedly hysterical symptoms will materially aid the diagnosis—such as attacks of hysterics, hemianæsthesia, paralysis, and contracture of limbs. Certain peculiarities in the attack will point to the hysterical origin, such as the sudden onset, the relation of the malady to emotional causes, whether arising as the result of such causes, or being aggravated thereby. The persistence of the voice for certain acts—such as coughing, sneezing, or singing—is highly characteristic of the hysterical nature of an aphonia. It is characteristic of hysterical aphonia, not including, however, the rarer spastic form, that the patient usually evinces little real effort to speak, and there may be even a marked immobility of the lips during the attempt. The cessation of stridulous breathing during sleep is peculiar to hysterical stridor. Chloroform narcosis will also cause its complete cessation,

and both in sleep and in the earlier stage of chloroform narcosis the emission of vocal sounds may decide the nature of an aphonia. The coincidence of marked sensory trouble about the pharynx, palate, and larynx points to the hysterical origin of the affection. This is sometimes of the nature of hyperæsthesia, but more frequently of anæsthesia. Such patients may be particularly tolerant of laryngeal mirrors, and easily bear the introduction of an instrument into the larynx itself. Laryngoscopic examination is, however, the most important means of establishing our diagnosis. There is an absence of gross disease of the larynx. The vocal cords will usually be of a perfectly normal colour, or may be merely somewhat congested. The various disordered movements above described will be recognised. These are almost always bilateral, and equal on the two sides. They, for the most part, bear no resemblance to the effects of organic disease. Tremor of the cords is often seen in all hysterical affections.

Some of these affections are very intractable, and may require us to bring to bear all those principles of treatment which have been found serviceable in other forms of hysteria. Into these I need not enter. Most cases of aphonia yield readily to suitable treatment. Derangements of health must be treated from the first. Iron and strychnia are often indicated. We must impress on the patient the absolute certainty that the aphonia can and will be cured. If laryngeal catarrh be present, we must apply suitable treatment, especially direct applications with the brush, which have a good moral effect. The preceding course, combined with occasional strong, peremptory exhortations to use the voice, will often succeed in effecting a cure. If not, faradism should be used externally—or, better still, internally. A strong current should be used, and it is important that the first application should be attended with decided benefit, if not complete cure. In the treatment of the various kinds of stridor, it is advisable, once having made our diagnosis, not to exhibit to the patient too much concern or alarm. In some of these cases the dyspnœa is really alarming, but any sign on our part that we consider the case very serious or very extraordinary tends to aggravate the symptoms. In looking over the records of cases, one finds that tracheotomy has been performed in cases of stridor that were in all probability hysterical, and yet the tube had to go on being worn indefinitely. When urgent and persistent dyspnœa exists, inhalation of chloroform, short of anæsthesia, will relieve the symptoms. Otherwise the treatment of hysterical stridor and hysterical cough must be mainly of that kind which is beneficial in other hysterical maladies. Relapses are apt to occur in all these motor affections of the vocal cords, and it is by a judicious employment of general treatment, both physical and moral, rather than by local or special treatment, that relapses can be effectually guarded against.—*Lancet, Feb.* 23.

17.—ON STRYCHNINE AS AN ANTIDOTE IN CASES OF NARCOTIC POISONING.

By G. A. Gibson, M.D., F.R.S.E., Surgeon's Hall, Edinburgh.

In the cases of narcotic poisoning which have come under my own personal notice during the last three years, strychnine has been used hypodermically when there has been any irregularity or interruption of the breathing, which appeared to threaten a failure of the respiratory centre. The effect of the drug is immediately shown by the increased rate, more regular rhythm, and greater depth of the respirations, and even in cases where the breathing has ceased it has again commenced after the administration of the strychnine. The most convenient form in which strychnine may be employed is undoubtedly that of the "hypodermic tabloids," introduced a few years ago by Messrs. Burroughs, Wellcome, and Co., in which the alkaloid is combined with sulphuric acid as a sulphate. These tabloids, as any one may easily satisfy himself, keep perfectly, and are therefore much better than solutions in this respect. They are kept in the same case as the syringe; they can thus be laid hold of at a moment's notice, and time is accordingly saved. They have further the advantage of being quickly dissolved by trituration with a few drops of water in the small glass mortar supplied with them.

It may not be out of place to add a word on the subject of the general treatment of narcotic poisoning, inasmuch as to certain of the directions given in the ordinary books, and even in works specially dealing with the treatment of cases of poisoning, exception must be taken. The chief indications in all such cases are two in number:—First, to remove any of the poison that may be within reach; and second, to sustain the activity of the vital centres, especially that concerned in the maintenance of the respiration, until the poison which has been absorbed is eliminated.

The first indication can most perfectly be met by washing out the stomach by means of the syphon tube, which is at once more convenient and more thorough than the stomach pump. If neither syphon nor stomach-pump should happen to be at hand, a tablespoonful of mustard in half-a-pint of tepid water, or twenty grains of zinc sulphate in a similar quantity of water, may be administered. In suicidal cases, however, the exhibition of such remedies is as a rule well-nigh impossible, and for these, as well as many other cases, the hypodermic injection of one-tenth of a grain of hydrochlorate of apomorphine, which may always be kept ready in the form of tabloids, is necessary. By one or other of these methods the last trace of the drug may be removed from the stomach. If the syphon or stomach-pump has been employed, a pint of strong black coffee should be introduced

before it is withdrawn, or, if neither can be used, it may be given by the rectum.

The next indication is to keep the vital centres in a state of activity, while at the same time doing nothing that can in any way cause exhaustion of any part of the system. Here we have at our command several means of rousing the centres, which may be used in turn according to circumstances. It is well as a rule to keep the patient awake by asking questions or issuing commands in a loud voice. If this is not enough the same end may be attained by tapping the forehead with the tips of the fingers, pinching the arms and legs, or pricking the skin slightly with a needle. If these are not sufficient to prevent the appearance of sleep the cold douche may be used; but in my opinion the employment of cold is as far as possible to be avoided. A far more efficient mode of rousing the patient is to be found in the application of mustard leaves to the calves, and in the use of the interrupted or induced current, as by such means powerful stimuli may be administered without the possibility of aiding the depressing effects of the poison.

One method of keeping the patient awake must emphatically be condemned, namely that of making him walk about, as is still to be found recommended in some of the text-books. This method used to be in vogue at some of the hospitals of my acquaintance, and was carried out by means of relays of policemen specially told off for the duty. The patient was marched round the waiting-room between two of them, and was followed by the resident-physician or clerk in charge of the case, whose *rôle* was to flick the calves with a wet towel, if there were any signs of flagging energy on the part of the patient. This mode of preventing the patient from sinking into slumber has a great tendency to exhaust the vital powers, and has almost everywhere been rightly abandoned. Another method commonly adopted in such cases must also be at least as strongly denounced, namely, the administration of alcoholic stimulants. These aid the action of narcotics, and must be studiously avoided.

Keeping the patient in the horizontal position, the respiration is to be carefully watched, and if there should be the least sign of irregularity, or shallowness, or inequality in the breathing, one-hundredth or one-fiftieth of a grain, according to the age of the patient, of sulphate of strychnine should be administered subcutaneously, and may be repeated at intervals of an hour two or three times. If, in spite of the strychnine the respiration becomes very feeble or ceases entirely, artificial respiration must be commenced promptly. The most convenient method to employ is that of Sylvester; and it should be persisted in until, on the one hand, the respiration is carried on by natural means, or, on the other, the heart has for half-an-hour ceased to beat. If any one who

reads these remarks should employ strychnine in the manner above described, he will be struck by the immediate improvement in the respiration which follows its administration.

If the circulation threatens to fail in consequence of the poison affecting the motor mechanism, or of spasm of the arterioles caused by deficient oxygenation of the blood, it also will require prompt attention. The use of the strychnine is of service as a stimulant to the motor centres of the heart, and may be aided by the employment of ammonia or ether; while if artificial respiration has been thoroughly performed there should be no spasm of the arterioles; but in the event of such an occurrence recourse must be had to nitrite of amyl.

Although special reference has been made in these remarks to narcotic poisoning, it must be added in conclusion that in cases of danger from failure of the respiratory centre, caused by the general anæsthetics, the employment of strychnine is likewise of the greatest importance, a fact of which experience has convinced me. One case of this kind which came under my care, in which the respiration failed after the patient had swallowed a large quantity of chloroform, was lately placed on record by my friend Dr. Crawford Dunlop. It seems to me that the hypodermic administration of strychnine is clearly indicated in all cases where the respiration fails during the use of any of the general anæsthetics.—*Practitioner, Dec.* 1888, *p.* 402.

DISEASES OF THE ORGANS OF CIRCULATION.

18.—TREATMENT OF VALVULAR DISEASES OF THE HEART.

By J. M. Da Costa, M.D., Professor of Medicine in the Jefferson Medical College, Philadelphia.

[We regret that pressure upon our space prevents our placing the whole of Dr. Da Costa's admirable paper before our readers. We reproduce here and at other parts of this volume (see *Synopsis*) the sections dealing more directly with its practical details.]

I hold that the precise valve affected is not, with our present resources, the keynote to the treatment of valvular heart disease. Much more important is it to regard the state of the muscular fibre; the size of the cavities; the condition of the arteries, veins, and capillary system; the secondary results of the cardiac lesion; the control of the nervous system. Important, too, it is to bear in mind the cause of the malady. Holding these views and largely based on them, I advance these propositions for the management of cases of valvular disease of the heart. We are to take as indications:—

(1) The state of the heart-muscle and of the cavities. (2) The

rhythm of the heart-action. (3) The condition of the arteries and veins and of the capillary system. (4) The probable length of existence of the malady, and its likely cause. (5) The general health. (6) The secondary results of the cardiac affection.

It is on those considerations that the treatment of valvular affections turns, and the first of them is, from a practical point of view, the most important. It influences action in diverse ways. Thus, if we have a case with heart muscle which has increased in size simply to the extent necessary to overcome the difficulty made by the valvular imperfection; in which the cavities are but little stretched; in which a stronger impulse is not associated with marked apex displacement or with greatly increased transverse percussion dulness; in which the arteries do not throb inordinately, nor the veins are turgid, nor the surface mottled and the capillary circulation sluggish; in which there is no dropsy, no respiratory embarrassment; in which the general health is good, and exercise does not produce inordinate distress,—we know that compensation has fairly followed injury, that heart muscle and cavities are in, for that case, healthy condition, and should endeavour to keep them so by simply regulating the patient's life and habits. No matter by what name the valvular disease is labelled, there ought to be no interference with it by drugs, certainly not be remedies which act on the heart.

But the same patient may show excessive cardiac growth and force, and be greatly benefited by cardiac sedatives; or later he presents a halting beat of the heart, the cardiac dulness has increased, so has the impulse in extent, but not in force; there is œdematous swelling around the ankles; the veins are more prominent; lungs and liver are engorged; small vessels are visible in the skin, and are tardily emptied by pressure;—the stretching, faltering heart calls for support, and is rallied, made regular, and kept for a long time performing its functions admirably, by the persistent employment of moderate doses of digitalis. Yet this is the same patient; all the while the disease bears the same name. But his treatment has been followed by such striking results because the state of the heart muscles and of the cavity has been fully recognised, and been made the basis of remedial interference.

Persons thus supported in their circulation may be kept alive for years and capable of leading useful lives. But this is not the main point I wish to bring out. It is chiefly that the same valvular disease will at different times, according to the varying state of heart muscle and cavity, require very varying treatment. In truth, I have had cases come under my observation in which the active state of the circulation, the marked hypertrophy, the cardiac uneasiness were always greatly relieved by aconite, and so much aggravated by digitalis, which produced a sense of cerebral uneasiness and weight, that the patient had the greatest dread of this

drug, even for temporary purposes; yet I have known such cases in time, when the heart began to weaken, owe, for years, their life to the steady use of digitalis.

The class of cases just alluded to, chronic in their course with slowly deteriorating compensation, are, usually, those in which small doses of digitalis act so favourably. The quantity required is, indeed, rarely more than ten drops of the tincture twice daily, kept up until the effect on the heart and pulse becomes perceptible—which may be in a week or in several—and then suspended, to be resumed according to circumstances. Nay, I have found a single dose of ten drops, repeated once in twenty-four hours, preferably at bedtime, show the same happy results. Some patients do better with five-drop doses, every fourth or sixth hour. But the rather larger dose, at longer intervals, is usually the less disturbing plan. Should the digestive organs become deranged, I use digitalis by suppository; from two to four minims of the fluid extract incorporated in cocoa butter are efficient.

Digitalis acts in the cases under consideration chiefly as what is called a heart tonic; it makes the contractions of the cardiac muscle stronger and slower, it produces a fuller flow in the finer vessels. It answers, as already stated, in small or in very moderate doses. It is required in much larger amounts in those instances of valvular disease, comparatively rare, in which there is almost from the first dilatation and all the excessive feebleness of circulation this brings with it; or in which, late in the history of the valve affection, the dilatation has outstripped the hypertrophy. Under both these circumstances of cardiac weakness, digitalis may be alternated with strychnia and supplemented by alcohol.

There is yet another cardiac condition encountered in valvular disease, in which digitalis is the principal remedy, and in still larger doses. It is where the compensatory hypertrophy is gradually lessening in proportion to the valvular defect; where the venous system is becoming gorged, the breathing much oppressed, the internal organs congested; where the feet are beginning to swell, the pulse is rapid and compressible, and the heart often fitfully excited; it is when the symptoms become rather suddenly aggravated, and a sense of weight and distress in the cardiac region suggests that the organ does not fully empty itself, that larger doses of digitalis will show a wonderful influence. Fifteen minims of the tincture every second or third hour will not only cause the struggling organ to contract powerfully and help the general circulation, but will diminish the choked condition of the cavities, notwithstanding that up to a certain point digitalis prolongs the diastole. The action of the drug is helped by ammonia, by brandy; but while given in these large doses the patient must be kept at rest. The mischief once checked, smaller doses will again show their good effects. We may meet with the condition under

discussion in any case of valvular disease; undoubtedly most often in mitral complaints, but also in advanced stages of aortic regurgitation; and, if in the latter affection, we need not be deterred, on theoretical grounds, from withholding the treatment indicated.

In the remarks just made it has been assumed that we are dealing with hearts in which the muscular fibre, however increased, is, on the whole, healthy; in other words, not in a state of degeneration. But supposing that it be; suuposing that there be a granular, or a fatty, or a waxy, or a fibroid change. Is the treatment to be altered? I do not think that it can be materially modified except in the rather steadier use of stimulus; yet we will not obtain the same result from digitalis or kindred agents, and arsenic or strychnia is always worthy of trial. These are difficult cases to treat, and difficult cases to recognise. The age; the history, which shows a likelihood of fatty or other degeneration; the aspect of the patient; and the very fact that the heart muscle does not seem to respond to cardiac tonics, give us a clue to the true character of the affection. Neither the sphygmograph nor the cardiograph helps us much in the recognition.

We have been considering heart complaints, and they are the most common, in which sooner or later the compensation is defective, and the heart has to be sustained. But there are cases, already alluded to, in which this never happens, in which no interference is required, in which the patient, if patient he can be called, has a heart quite sufficient for the ordinary purposes of life. It gives him no uneasiness, and, even if aware of his cardiac malady, its existence ceases to trouble him. These are especially cases of aortic disease, narrowing or regurgitation, particularly the former, with marked, but not excessive hypertrophy. Secondary results of the cardiac affection are not seen; though, as is fully recognised, there is greater tendency to sudden death, and violent exertion must be avoided. Yet I have known persons having these aortic maladies distinguished in pursuits with constant strain; one, an officer of many campaigns; the other, a most laborious physician; the third, the captain of an athletic team at a college proud of its athletic eminence; and not one is aware of being the worse for exertion, suffering neither pain nor shortness of breath. Two have lived over twenty years since I have been cognizant of their malady; they do nothing to counteract its effect, except leading a very temperate life.

Yet another class of cases presents excessive muscular growth, and cavities that have but moderately increased. This state is more often met with in aortic affections, particularly regurgitation; but it may also happen in mitral regurgitation, with or without coexisting aortic disease. The impulse is extended, forcible, and forcible out of proportion to the cardiac percussion

dulness; there is often throbbing of the vessels of the neck, dull headache, tension in the pulse, and a feeling of constriction in the chest. Aconite is pre-eminently the remedy; it diminishes the blood pressure in the arterial system and gives great relief. I usually employ two drops of the tincture, every fourth or sixth hour, for the first few days of the treatment, and then only twice a day; or give one drop every third hour until an effect on the force of impulse and pulse is produced, and keep up this effect with a drop dose, two or three times a day, for several weeks, intermitting the treatment, and resuming it from time to time. Veratrum viride has similar applicability; it is, however, more apt to nauseate. But I have often had the happiest results from a combination of one-drop doses of aconite tincture with three of tincture of veratrum viride, and seven of tincture of ginger. It is an admirable sedative, and does not sicken.

Summing up, then, the treatment of valvular affections of the heart as they present themselves ordinarily, and basing it chiefly on the condition of the cardiac muscle and of the cavities, we find practically three groups:—(1) Cases in which no special treatment is required. (2) Cases in which excessive growth and strong action call for aconite or veratrum viride. (3) Cases in which, either early or late, and with or without increased muscle, the heart falters and needs support, and for which digitalis, used differently according to varying indications, is the principal remedy.

This line of treatment is held to independently of the exact valve affection. It requires tact and experience to adjust it to the individual case. But when adjusted, the results are excellent.—*American Journal of Med. Science, Nov.* 1888, *p.* 440.

19.—ADONIDINE IN THE TREATMENT OF HEART DISEASE.

By Thomas Oliver, M.D., M.R.C.P.Lond., Physician to the Royal Infirmary, Newcastle-on-Tyne.

The chief danger in heart disease arises from reduced arterial tension, for the heart itself, no less than the systemic capillaries, then suffers in consequence. If, therefore, this is a danger, our duty is clearly to maintain the blood pressure; but to do this effectively we must improve as far as we can the movements of the heart as the emitting organ, the arteries as the carriers, and certain nerve centres as regulating the distribution of the blood. When I am called to treat a case of heart disease, and I have made out to my own satisfaction the nature of the cardiac lesion, then it becomes with me less a question of murmur than what is the condition of the wall of the left ventricle. Is there compensation? and, if so, is it sufficient or has it given way? Is arterial tension low? and, if so, can it be raised? Now for all practical purposes digitalis answers very well. Digitalis, although an old

drug, is difficult to replace, and this simply because its therapeutics are modern and are now better understood. True, it fails every now and then, and satisfactory results can be obtained by strophanthus or convallaria. It is in mitral regurgitation that the action of digitalis is seen to advantage, although in many cases of aortic regurgitation digitalis in my hands has answered remarkably well. Once the actual condition of the left side of the heart is appreciated, and with it that of the right ventricle, the careful administration of any cardiac tonic will seldom be disappointing. For the last few months, however, I have been watching the effects of drugs in cases of heart disease viewed in the light of their causation, and from what I have seen of adonidine I have come to regard it as a drug capable of giving great relief to many of the unpleasant symptoms of heart disease.

Adonidine is a glucoside of Adonis vernalis, and was written up, if I may use the term, by Da Costa, who used it as a pure cardiac tonic. Under its administration he noticed a rise of temperature where it had previously been subnormal, and an increase in the strength and action of the heart. It had no diuretic action, however. He thinks it will never supersede digitalis, and that it answers best in cases of dilated heart. The cases in which I have tried it have been chiefly those of aortic and mitral regurgitation. In all of them great relief was given to præcordial pain, to the pain which ran down the left arm, and to palpitation and dyspnœa. I give it, combined with such things as sal volatile or chloroform water, in doses of one-sixth of a grain four times a day. It is a powerful drug, and is not borne well, particularly at first, in doses larger than this. Frequently, in fact, I begin with one-eighth of a grain, and I find this quite enough. Here is an epitome of some of my cases:—

J. G—, aged 34. Rheumatism twelve years ago. Has aortic and mitral regurgitation. Urine not albuminous; it averaged 24½ oz. before treatment, after treatment 27 oz., daily. Pulse 76. Made a satisfactory recovery.

John T—, aged 45. No rheumatic history. Is a labourer. Much exposed to wet and cold. Pulse 70, water-hammer. Aortic and mitral regurgitation. Urine not albuminous; it amounted to 34 oz. before treatment, and 36 oz. after it.

Joseph L—, aged 31; watchmaker. Rheumatic history. Pulse markedly water-hammer. Extensive aortic and mitral regurgitation. Adonidine in doses of one-sixth of a grain, thrice daily, relieved all his unpleasant symptoms, such as throbbing in the head and neck, noises in the ear, præcordial and brachial pain, and profuse perspirations, and he could walk better, without having such severe attacks of palpitation; but severe headache came on when he was taking the drug, which was quite unusual to him. The medicine was discontinued for two days, when his headache dis-

appeared, but under its use, in doses of one-tenth of a grain, he again remained for months remarkably well. Digitalis, strophanthus, belladonna, and also cyanide of zinc had been tried, but nothing gave relief until he took adonidine.

Luke B—, aged 56; mariner. No rheumatic history. Urine not albuminous. Aortic and mitral regurgitation. Before treatment his urine averaged 23½ oz. daily, and 36½ oz. after it.

W. H. H—, aged 44; sailor. No rheumatic history. Pulse 64. Aortic and mitral regurgitation. Before treatment his urine amounted to 30½ oz. daily, and 38½ oz. after it.

John B—, aged 46; a miner. No rheumatic history. Aortic and mitral regurgitation. Urine not albuminous; before treatment it averaged 32 oz. daily, and 40½ oz. after it.

Luke F—, aged 34; a sailor. No rheumatic history. Aortic and mitral regurgitation. Pulse 88. Urine not albuminous; before treatment it averaged 49½ oz. daily, and 40¾ oz. after it.

Adonidine has, in every case that I have given it, relieved all unpleasant symptoms. Every patient who has taken it has expressed himself, after a few days' trial of it, as feeling very much better, and that not in one direction only. The painful throbbing of blood-vessels, headache, and profuse perspirations have, in addition to dyspnœa and præcordial pain, disappeared; and whilst in most of the cases there has been a slight increase in the amount of urine thrown out after treatment, I am inclined to think that adonidine has little diuretic action. It is a cardiac tonic. It acts chiefly upon the heart, gently raising arterial tension; it has something of the sedative action upon the heart that belladonna has. It relieves the sense of increased intra-cardiac pressure; and the cases of aortic regurgitation in which, I think, it answers best are those where the lesion is due either to traumatic rupture of the valve or to chronic aortitis, and where it has not arisen from rheumatic endocarditis.—*Lancet, Nov.* 24, 1888, *p.* 1012.

20.—CARDIAC CHANGES IN CHRONIC BRIGHT'S DISEASE.

By Alfred L. Loomis, M.D., LL.D., Professor of Medicine in the University of the City of New York.

[In the *New York Medical Journal* for November 10th, 1888, Dr. Loomis makes a most important contribution to the literature of Bright's Disease, in which he endeavours to show, from clinical and pathological observations, that the most constant changes met with in the heart, in renal disease, are dilatation and degeneration of the ventricular wall, and not, as generally taught, simple cardiac hypertrophy. Also, that when simple hypertrophy is met with, it results not from the changes in the kidney tissue proper, but from the primary changes in the blood-vessels, which are said to be of an inflammatory and obliterative nature.

Dr. Loomis's clinical observations consist of: (1) "Two "striking examples of extensive hypertrophy of the left ventricle "associated with obliterating changes in most of the renal arterioles, "with but slight changes in the glandular structure of the kidneys. "Such cardiac hypertrophies are not a part of the pathological "history of the tubular and structural changes which take place in "the granular kidney, but belong to the general fibrosis and vas- "cular changes which precede their development." (2) "An "example of extensive obliterating changes in the renal arterioles "associated with the characteristic changes of acute parenchyma- "tous nephritis. With these kidney changes there was extensive "cardiac dilatation, moderate thickening of the cardiac walls, and "degenerative changes in the cardiac tissue. The natural expla- "nation of these changes is that the obliterating arteritis had been "gradually but progressively developing for years. As a conse- "quence a compensating hypertrophy was developed. On the "occurrence of the parenchymatous changes in the kidneys the "nutritive power of the blood became so diminished that all the "organs and tissues of the body, especially the heart, became "enfeebled, and cardiac dilatation and feeble heart was the result." (3) "An example of extensive parenchymatous change in the "kidneys, with little obliterating change in the vessels associated "with dilatation of the heart cavities and degeneration of the "ventricular walls." (4) "An example of extreme cardiac dila- "tation, accompanied by fatty, granular, and connective tissue "changes in the cardiac walls associated with a small granular "kidney." (5) "An example of extensive valvular disease with "hypertrophic dilatation of the heart associated with large white "kidney, in which it was evident that the kidney changes were "secondary to the cardiac." In addition to these observations Dr. Loomis gives in tabular form, the renal, cardiac, and vascular changes found post-mortem in forty cases of Bright's disease. We reproduce here only the more important of Dr. Loomis's remarks.]

My clinical and pathological studies during the past five years, have forced upon me the conviction that simple cardiac hypertrophy is not found in so large a proportion of cases of chronic Bright's disease in America as are reported by English and Continental observers; and that when it is associated with extensive changes in the glandular structure of the kidney it is due to the primary arterial rather than to the renal disease. The most constant cardiac changes which I have met with in chronic Bright's disease are dilatation of the heart cavities and degeneration of the heart walls. In most instances where I have found tubular and interstitial changes in the kidneys in addition to obliterating arteritis, cardiac hypertrophy, when present, was associated with degenerative changes in the heart walls and dilated cavities.

In those forms of renal disease in which the principal changes

were in the tubes, Malpighian capsule, and connective-tissue stroma, with little obliterating change in the vessels, I have found no true cardiac hypertrophy, but rather the changes which are characteristic of a Bright's heart.

One who studies Bright's disease clinically in our large hospitals soon realizes that the heaving impulse and the increased arterial tension, which seem to be the essential features of the disease as described by many writers, are the exception rather than the rule, for in most of such cases it is difficult to determine the maximum point of cardiac impulse, it is so diffused and indistinct; and, although the cardiac area of dullness may be increased, the other signs of hypertrophy are wanting, and when, at the autopsy, a large flabby heart is found, one comes to look for other cardiac changes in chronic Bright's disease than muscular hypertrophy.

In making so broad a statement as that hypertrophy is not the characteristic cardiac change in chronic Bright's disease, it seems necessary to consider the interdependencies which have been assumed to exist between cardiac, arterial, and kidney disease, and to point out how many of them, rightly interpreted, support our present proposition.

Gull and Sutton recognize the fact that the cardio-vascular changes vary greatly as the kidney lesions affect the vascular or tubular structures, and ascribe the hypertrophy found in parenchymatous nephritis in part to weakening of the circulation through a general œdema of the tissues and malnutrition from anæmia and uræmia, a point which I wish especially to emphasize. While high arterial tension throughout the body thus becomes the recognised cause of the cardiac hypertrophy, the explanation both of its cause and nature was various and contradictory. So long as the renal disease was regarded as primary, the arterial thickening was considered as inflammatory in character, and due simply to the direct irritation of excrementitious products in the blood upon the delicate capillary walls. When, however, the arterial disease was supposed to be primary and the kidney disease secondary, an irritation must be found elsewhere. An excessive production of uric acid, by its presence in the blood in irritating quantities, as readily explained it as did faulty eliminations; and the recognised ætiological relations of gout and the uric-acid diathesis to granular kidney thus suggested deficient hepatic functions, either inherited or acquired, as the starting-point in the chain of pathological processes which eventuate in both cardio-vascular disease and coincident granular kidney.

Conclusions.—A general review of my cases fairly indicates the following conclusions:—As a rule, the more extensive the obliterating changes in the renal arterioles, the greater the degree of cardiac hypertrophy. I have been impressed by the distinct relations which one seems to bear to the other. In the few cases

in which cardiac hypertrophy was not present with the obliterating changes in the arteries, the general nutritive condition was markedly faulty. In two instances of drunkards, although the kidneys were extensively granular and the arterioles much thickened, no evidence of hypertrophy existed, although the dilatation was excessive. Even in the cirrhotic kidney the primary cardiac hypertrophy has no necessary connection as cause and effect with the kidney changes, but both are a part of the general fibrosis which has its origin in a fibroid diathesis, either hereditary or acquired, the hereditary influences being far stronger than the acquired. In two cases where the cardiac hypertrophy was most extensive, the only change found in the kidneys was obliterating arteritis in the renal vessels. In the other varieties of Bright's disease the heart changes seemed to be directly dependent upon the renal disease, or rather upon the toxæmia and faulty nutrition which results; the evidence of this faulty nutrition was shown first and most markedly by changes in the heart walls and cavities.

In all forms of chronic Bright's disease increased arterial tension and more or less compensating hypertrophy is an early phenomenon. In the cirrhotic it is usually gradual in its development, in some cases extending over years, but in all instances, when the period is reached at which the renal symptoms clearly establish interference with the functional anatomical elements of the kidney, a feeble heart action and diminished arterial tension will indicate degenerative cardiac changes. When once the period of tension is passed, it can never be re-established, except temporarily by the action of certain drugs.

Synchronously with the failure of heart power, changes occur in the venous blood system, which give rise to many of the distressing symptoms which are present in the advanced stage of so many cases of Bright's disease. There seems to be no fixed or uniform relation between the character and extent of the changes in the glandular structure of the kidneys and those in the renal and systemic vessels: the changes observed in the vessels of the pia mater, however, were usually less in degree than those in the kidney. In all cases where advanced cirrhotic changes in the kidneys existed the ventricular cavities were dilated. In cases of extensive dilatation, with little or no thickening of the cardiac walls, some form of degeneration of the muscular tissue existed. If the cardiac substance was soft and flabby, the fibres were granular, their nuclei obscured, and their striæ more or less obliterated, with a loss of consistence which allowed them easily to break down when an attempt was made to separate them. The papillary muscle of the mitral valves was frequently the seat of fibroid change, their columns having lost their fleshy appearance and assumed that of tendinous cords.

The edges of the flaps of the mitral valves were not infrequently

found slightly thickened, but the evidences of acute endocarditis, secondary to the renal disease, were present in but one of my cases, while slight thickening and induration at base and tip of the valves, indicating interstitial endocarditis, were present in a few cases.

Sudden heart failure accompanied by dilatation, secondary to cirrhotic kidneys, are sometimes regarded during life as cases of mitral regurgitation on account of the presence of a loud systolic apex murmur; but in no instance did I find at the autopsy evidence of mitral lesions in such cases. Clinical experience teaches that rheumatic valvular disease of the heart may remain latent for many years, during which the heart will perform its functions with efficiency; if, however, renal disease supervene in such a case, its effects are most disastrous, as is evidenced by my sixth case, for the valvular lesions which had remained latent so many years in this case became pronounced under the strain on the circulation which was produced by the complicating renal disease, and led rapidly to the development of the distressing symptoms of heart insufficiency. The association of valvular affections of the heart with Bright's disease has been sharply insisted upon by many observers. On the one hand, the kidney disease has been alleged to be the cause of the cardiac affection; on the other, valvular lesions have been asserted to be the cause of the renal disease. In only three of my tabulated cases were valvular lesions found which could be regarded as secondary to the kidney disease.

The great discrepancy in the statistics given by different observers in regard to the frequency of the valvular disease as a cause of Bright's kidney is my excuse for presenting the following statistics taken from the records of Bellevue and Roosevelt Hospitals. While it is but fair to admit that hospital records are more or less unsatisfactory when searched with a view of determining any definite point, I think I can justly say that these records present as fair a basis of comparison as similar reports from other hospitals. The method employed was to take every case of heart disease recorded for a certain period, omitting only those cases of combined cardiac and kidney disease in which there was no evidence of the cardiac lesion having been primary.

A total of one hundred and sixty-four cases was thus gathered. Of this number, forty-three were complicated by evidences of Bright's disease, as shown by the presence of albumin and casts in the urine, or in 20 per cent. of all the cases. In thirty-five of the forty-three cases there was a history of chronic cardiac disease extending over periods of from one to twenty-five years. Thus, making all due allowances, it seems to me that these cases evidence a much closer relation between valvular disease of the heart and secondary disease of the kidneys than is usually given in hospital statistics. Three cases included in my tables are well-marked examples of the usual kidney changes found in such cases. In all,

the kidneys were enlarged, and, in addition to the usual changes which are found in the large white kidney, the arteries were thickened and dilated; in each of these cases there was right heart insufficiency. The results of these studies seem to indicate that the cardiac changes in chronic Bright's disease have a wide range of variation, and that one cannot predict with certainty the exact nature of the changes which may be present in any given case, except that they probably are degenerative, and that, sooner or later, a condition of heart failure will be reached which may fairly be designated as a Bright's heart. The more marked these are in any case, the more unfavourable the prognosis. We must, as it seems to me, regard Bright's disease as a constitutional disease, in which the repair and waste in all the tissues of the body are imperfectly carried on, and in one way or another the kidney changes are expressive of other visceral and arterial changes, which, combined with the kidney lesion, make up the clinical and pathological history of the disease.—*N. Y. Medical Journal, Nov.* 10, 1888, *p.* 505.

DISEASES OF THE ORGANS OF RESPIRATION.

21.—ON RECURRENT PNEUMOTHORAX.

By Samuel West, M.D., F.R.C.P., Physician to the Royal Free Hospital, London.

Some months ago, Mr. Gabb published in the journal, under this title, a most important and interesting case, in which there had occurred three attacks of pneumothorax with complete recovery. I had a similar case under my care at the beginning of this year at the Chest Hospital, Victoria Park, and it may be well, now that attention has been drawn to the subject by Mr. Gabb's case, to give also an account of my own.

W. H. D., aged 22, was admitted on January 3rd, 1888, into the Chest Hospital, Victoria Park, complaining of shortness of breath. The attack came on, he stated, without any apparent cause, on the morning of December 23rd, on getting out of bed. The breathing was so short that he found it necessary to remain at home, though he did not lie in bed; and, as after some days it still continued short, he applied for admission into the hospital. He had not felt ill or suffered in any way except with the shortness of breath. The patient was a healthy-looking young man, slightly built, but well-developed and muscular. There was no evident dyspnœa. The shape and movements of the chest were symmetrical, but the percussion note was tympanitic over the whole right side from the apex to the base, back and front. The tympanitic resonance extended to the left edge of the sternum right down to the xyphoid cartilage, and the liver dulness did not rise above the seventh rib. The heart was displaced to the left, the

apex beating under the left nipple. The vocal vibrations could be feebly felt and heard over the whole side, but the respiratory murmur was absent except at the base behind, where weak and distant amphoric breathing was audible. There was no bell sound or succussion. The lower edge of the liver could not be made out. The opposite lung was completely healthy, and the other organs seemed normal. The case was clearly one of pneumothorax without effusion, and in the process of resolution.

The subsequent history of the case is simple. The shortness of breath quickly disappeared. The patient looked and felt well, and gained flesh. The abnormal physical signs gradually vanished, and on February 6th the following note was taken: "The shape of the chest is symmetrical, the movements free, but, on deep inspiration, there seems to be a little more expansion on the left side, especially in the axilla. The liver dulness begins at the sixth rib in the nipple line. The cardiac dulness is of its normal size, and the apex in the proper place. The percussion note is still a little more resonant on the right side; the breath sounds are distinctly audible and vesicular in character over the whole side down to the base. In the mid-axillary region a little fine crepitation is heard, probably pleuritic, for it is in this place that the patient has complained of pain for the last few days." The patient's previous history was good. He had had no serious illness except scarlet fever and measles, but he had been regarded as a rather delicate child, having been subject to a cough on catching cold ever since an attack of bronchitis at the age of 3 years, but he lost his cough as he grew older. His father was living and well, but his mother died after a confinement. He had a brother and a sister, both strong; and he considered himself strong and active, and enjoyed athletic exercises.

Now comes the interesting part of his history. Last August, while walking quietly, he was suddenly seized with pain above the right clavicle, and felt a bubbling sensation in the right side. The breath at the same time became very short, and he had a rather violent cough—as he called it, a "churchyard cough"—which he had not suffered from before the breath became short. He was able to keep at his work, however, but had to avoid all hurry and exertion for about a fortnight, when he appeared to get quite well. In the beginning of November, the morning after a game of football in which he was several times charged violently, he became again short of breath. The breathing continued short for about a month, but at the end of that time he found himself quite well again, and continued well until the present attack three weeks later. The two previous attacks were, he stated, all similar to the present one. In the absence of direct evidence, there is a very strong probability that the previous attacks were, like the present, due to pneumothorax. The last

attack was without doubt pneumothorax, but he came under observation rather by accident than of necessity, for it was not until he had had the dyspnœa for ten days that he presented himself at the hospital, and even then the dyspnœa was so slight that he grumbled at being kept in bed.

There are two facts about pneumothorax which, though well established, are not generally known: the one, that it is of not uncommon occurrence in the apparently healthy; and the other, that it may develop in the latent insidious way it did in this case, and without the violent symptoms which frequently accompany it. The interest of this case and of that published by Mr. Gabb does not lie in their illustrating these points, but in the fact, which they establish, that a patient may have more than one attack of pneumothorax and recover completely. I do not see any reason why this should not be so, but I do not recollect any recorded case of the kind, so that Mr. Gabb's case is a very important contribution to the literature of the subject.—*British Med. Journal, Jan.* 12, 1889, *p.* 69.

22.—THE TREATMENT OF RECENT PLEURITIC EFFUSION BY THE ADMINISTRATION OF SALINE CATHARTICS.

By P. Blaikie Smith, M.D., Physician and Lecturer on Clinical Medicine, Aberdeen Royal Infirmary.

Those whose general practice it is to treat cases of considerable pleuritic effusion by tapping the pleural cavity must confess that, not infrequently, the fluid reaccumulates, and that it occasionally becomes purulent. Recognising the truth of this clinical observation, I have for some time past discarded operative interference in such cases, relying, for the relief of the effusion, upon the effects produced by saline cathartics, administered in a manner which I shall indicate presently. The exact physiological action of this class of drugs is beyond the scope of the present paper. Suffice it to say that, primarily, they induce watery evacuations from the bowels, with the necessary result that the blood becomes inspissated and absorption stimulated, and hence their well-known utility in the removal of dropsical conditions. Bearing in mind this fact in therapeutics; recollecting, too, that serous exudations have been known to disapper during an attack of cholera (when the blood is to a great extent deprived of its watery element), and that the simple withdrawal of fluids from the diet has been advocated as curative of pleuritic effusion, it seemed reasonable to suppose that if a patient, the subject of this complaint, were starved of fluids and purged by salines, the resulting concentration of the blood would be remedied at the expense of the effusion. In this expectation I was not disappointed, as will be seen from the notes of the following cases treated in accordance with the theory set forth above.

The first case was that of a spare-looking man, aged 28, who was admitted into the Aberdeen Royal Infirmary on January 26th, 1887, suffering from acute pleurisy, with extensive effusion on the left side. The chest gave a dull percussion note up to the second rib, and the heart was beating away to the right of the sternum. The temperature was 101 degrees. For five days after admission, he was treated by the administration of alkaline diuretics, along with the application of counter-irritants. At the end of that time, however, as there was not the slightest improvement in his condition, I determined to try the effect of saline cathartics. Accordingly, on February 1st, I ordered him to have, twice a day, two drachms of magnesium sulphate, dissolved in as small a quantity of hot water as possible, and directed that he be almost starved of fluids, taking care on this head to explain to the patient the object of this (to him) somewhat extraordinary procedure. In passing, I may mention that magnesium sulphate was the saline chosen, partly from its effective cathartic properties, and partly from its great solubility, for it is dissolved in less than its own weight of hot water. The effect of the treatment was soon apparent, and without going into the gradual changes that took place in the physical signs, it will be sufficient to state that in eleven days all evidences of effusion had disappeared, and that the heart was restored to its normal position. As was to be expected, the secretion of urine underwent marked diminution during the time the patient was under the cathartic treatment, and it is interesting to note that the amount became more than physiological soon after the drug was discontinued.

The next case was that of a robust-looking fisherman aged 28, who was admitted to the Infirmary on May 19th, 1888, complaining merely of debility. On physical examination of the chest, however, there were signs of great pleuritic effusion on the left side. Skodaic resonance was unusually distinct, and the heart was seen pulsating in the right third interspace. There was no increase of temperature. Without spending time in any preliminary treatment, the patient was ordered on May 22nd to have twice a day half an ounce of magnesium sulphate dissolved in the minimum quantity of water necessary for solution, and, as in the previous case, the ingestion of fluids was restricted. Free purgation rapidly ensued, and on May 24th cardiac pulsation was faintly visible in the left fourth interspace close to the sternal edge, but it was still to be seen, though less distinctly than upon admission, to the right of the sternum. Skodaic resonance was now greatly diminished, and the other signs of effusion were much less evident.

On May 29th it was noted that the apex of the heart was beating vigorously in the left fourth interspace midway between the nipple and the sternum (apparently the normal situation in this patient, for there it subsequently remained); skodaic resonance

could no longer be elicited; all signs of effusion had disappeared, and loud pleural friction was audible at the extreme base of the lung posteriorly. Within a week from this date the last traces of friction vanished, and the patient was discharged.

In bringing before the profession the treatment of pleuritic effusion by the administration of saline cathartics, as illustrated by the foregoing cases, I trust that I shall not be understood as recommending its indiscriminate adoption. Patients of poor physique or in whom a phthisical tendency exists are obviously ill suited for this plan of treatment, and I need hardly mention that when dyspnœa is an urgent symptom, especially when accompanied by signs of collateral hyperæmia or œdema, the use of the trocar gives more speedy relief than that afforded by free purging. Still, one meets with many cases where the effusion is large and of recent occurrence, where dyspnœa is not pronounced, and where signs of physical and constitutional debility are absent, and these are the cases which seem to me to be peculiarly adapted for treatment by the method which is the subject of this paper.—*British Medical Journal, Oct.* 13, 1888, *p.* 809.

23.—ON SPURIOUS HEMORRHAGE FROM THE THROAT.

By Percy Kidd, M.D., F.R.C.P., Assistant Physician to the Brompton Hospital for Diseases of the Chest, London.

In the great majority of cases in which bleeding is attributed to the throat, the blood comes from some part of the respiratory tract below the glottis, nearly always from the lung. Less frequently the nose, gums, or cavity of the mouth supply the blood which is believed to come from the pharynx or larynx.

It is no exaggeration to say that most of the so-called hemorrhages from the throat occur in persons suffering from early pulmonary phthisis, the blood being actually derived from the lung. What, then, is the reason of the mistake? The explanation is probably to be found in a belief that when hemorrhages take place from the lungs, physical evidence of pulmonary disease must be forthcoming. If no abnormal physical signs are detected a pulmonary origin is eliminated, and by a process of exclusion the hæmoptysis is attributed to the throat. There could be no greater error than this, and I would not for a moment suggest that such a belief is general; but a notion of this sort does exist, and may lead to misconception. It is of course admitted, especially by those who see much of chest disease, that a complete absence of physical signs of phthisis does not preclude the existence of pronounced pulmonary lesions; but it may be doubted whether the recognition of this important fact is as general as it should be.

If a patient has hæmoptysis without other definite pulmonary

symptoms, but happens to be suffering from laryngeal catarrh at the time, we cannot be surprised if he is tempted to ascribe the hemorrhage as well as the laryngeal symptoms to the throat; and it should be remembered that it is just in these cases of so-called "phthisis ab hæmoptoë" that pulmonary and constitutional symptoms are apt at first to be very slight, or even completely absent. I may give a brief illustration of this point. A short time ago a young woman came to the out-patient room complaining of bleeding from the throat, to use her own words. She stated that she had suffered from two separate attacks of hemorrhage accompanied by loss of voice, the last having occurred a few days previously. Her general condition was fairly good, and there were no marked constitutional or pulmonary symptoms, but she was completely aphonic. A careful exploration of the chest revealed no definite signs of disease. The larynx was somewhat congested, and there was paresis of the adductors of the vocal cords, but no further affection of the throat. The absence of physical signs of disease of the lungs or heart precluded a positive diagnosis, but it was thought probable that the patient was suffering from phthisis. The sputum was then examined and found to contain tubercle bacilli in small numbers, and thus our suspicions were confirmed. Two months later slight signs of phthisis were detected at the apex of one lung. In this case the coincidence of hemorrhage and loss of voice on two different occasions had no doubt impressed the woman herself very much. Indeed, to anyone inclined to find in hemorrhage from the throat an easy explanation of doubtful cases of hæmoptysis, this patient would have appeared as a veritable *deus ex machinâ*.

We must all be familiar with cases of a more or less similar character, which often present much difficulty. But because we fail to find evidence of some pulmonary affection, we should not be content to ascribe the hæmoptysis to the throat, unless gross disease of the pharynx or larynx is present. In the comparatively few cases where we have the opportunity of witnessing an attack of hæmoptysis ourselves, it is inadvisable and often impossible to make a critical examination of the patient while the bleeding continues, though the characters of the blood and the method of its expulsion will usually enable us to decide whether it comes from the lung or not. But, as a rule, we have to trust to the patient's account of the hæmoptysis, and from this it is often difficult to decide where the blood came from, assuming, of course, that an examination of the chest yields a negative result. In such cases a careful inquiry into the general health, especially as to the presence or absence of such symptoms as pyrexia and loss of flesh, will not infrequently prevent us from underestimating the importance of what may appear to be an obscure or trivial hemorrhage. Valvular affections of the heart and pul-

monary hyperæmia from any cause may, of course, give rise to hemorrhage from the lung, in the absence of any disease of these organs. But as we are not now concerned with the pathology of hæmoptysis, which is a sufficiently large subject in itself, we need say nothing further on this point.

Our present object is to emphasise the distinction of pulmonary from laryngeal or pharyngeal hemorrhage. But while we recognise the extreme rarity of hemorrhage from the throat as compared with pulmonary hemorrhage, we must not fall into the opposite error, and attribute every hæmoptysis to serious disease of the lung. Bleeding from the nose, especially if it take place during sleep, is apt to be mistaken for pharyngeal or laryngeal hemorrhage, the blood trickling back into the larynx, and being expelled by coughing. A concomitant catarrh of the throat will, of course, tend to foster this impression. In the same way, bleeding from the gums, from whatever cause, may simulate hemorrhage from the throat. Difficulties of diagnosis more often arise in the case of the female sex. For not only are women more liable to the less severe or spontaneous variety of hæmophilia, a disease which is almost invariably congenital and hereditary, but they are also prone to a hemorrhagic tendency acquired after the age of puberty. Epistaxis especially is much more common in females than males, whether as the result of true hæmophilia, an acquired hemorrhagic diathesis, or of other causes. The active hyperæmia of the erectile tissue of the nose, which is the immediate cause of the bleeding, has in all probability intimate reflex relations with the menstrual function, and with profound nervous impressions of various kinds through the medium of the vasomotor system. Anæmic girls not unfrequently complain that their mouth and throat is full of blood in the morning, or that they find blood on the pillow on rising from bed. This is often found to consist of a thin, reddish, watery fluid, apparently blood-stained saliva, quite unlike the blood expectorated from the lung. On examination, no disease of the mouth, nose, throat, or lung can be detected, and the blood seems to have oozed from the gums or mucous membrane of the mouth, rather by a process of diapedesis than by rupture of vessels. Such patients generally manifest no serious impairment of their general health. We must, of course, be on the watch for imposture, especially in the case of hysterical girls, who sometimes inflict small wounds on their gums or mouth, and encourage bleeding by suction. In order to eliminate fallacies of this kind as far as possible, a careful examination of the mouth, nose, pharynx, and larynx should be instituted. As a rule, no source for the loss of blood will be discovered, unless the hemorrhage be of recent occurrence, and our conclusions must be drawn from the history, aspect, and condition of the patient, tempered largely by the teachings of experience and

pathology. Not infrequently, a careful inquiry into the nature of the attack, with the subsequent and previous train of events, especially with reference to any discharge of blood from the nose, or staining of the nasal secretions, will suffice to determine the occurrence of epistaxis. However, it must be confessed that the utmost care will not prevent mistakes in exceptional cases. We shall best guard ourselves against error by a close investigation into the features of each individual case, coupled with an intelligent appreciation of the pathology of the subject.

I must now sum up with the expression of a belief that, excluding the bleeding that may complicate ulcerating carcinoma, suppuration, or traumatism, hemorrhage from the throat is extremely uncommon, nearly always slight, and for the most part devoid of importance. In the large majority of cases thus described, the larynx and pharynx are not actually concerned; the blood comes either from the lung or from the cavity of the nose or mouth. —*British Medical Journal, Sept.* 14, 1888, *p.* 610.

24.—CREASOTE AS A REMEDY IN PHTHISIS PULMONALIS.

By Beverley Robinson, M.D., Professor of Clinical Medicine at Bellevue Hospital Medical College, New York.

I am convinced, in view of what I have seen, that we have in beechwood creasote a remedy of great value in the treatment of pulmonary phthisis, particularly during the first stage. Not only does it lessen or cure cough, diminish, favorably change, and occasionally stop sputa, relieve dyspnœa in very many instances; it also often increases appetite, promotes nutrition, and arrests night-sweats. It does *not* occasion hæmoptysis, and rarely causes disturbance of the stomach or bowels, except in cases in which it is given in *too large* doses.

As regards the anti-bacillary effects of creasote when taken internally, or by inhalation, or both combined, I have nothing new or very positive to offer. On two occasions, in my own experience, when ordinary care had been taken by a good examiner, bacilli which previously had been present in considerable numbers, subsequent to treatment had notably decreased, or completely disappeared. In other cases the examinations made did not permit me to form a reliable judgment in this regard. As to whether creasote interferes with the bacilli locally, or through the circulation in virtue of its antiseptic properties, or whether, in addition to its promotion of sclerosis, it merely favors general nutrition whilst acting happily upon secondary, though important, symptoms, I am not prepared absolutely to affirm. I would add, however, that I am inclined at present to accept the latter, rather than the former belief. This conviction is based mainly upon what seems to me to be a fair and proper interpretation of numerous facts observed by

myself and others already referred to. It is important to note, however, that I am now decidedly of the opinion that patients, as a rule, improve more rapidly and surely upon the conjoined treatment by means of antiseptic inhalations and creasote given internally, than they do upon either treatment by itself. I have attained this conviction by carefully watching the effects produced when one or other of these methods was abandoned for a time, and afterward when both were resumed and systematically used. It is probable, therefore, that in many cases the frequent, or prolonged, topical application of creasote vapors to the respiratory tract in a considerable area is of undoubted utility.

Another fact of great practical importance relates to the purity of the drug and the source from which it is obtained. For the information of those whose attention has not been directed closely to this matter, I would state that in New York City (and I presume elsewhere) much of the creasote which is dispensed is simply crude carbolic acid, obtained from the distillation of coal-tar oil, and commonly called "commercial creasote." It has neither the colour, the odour, nor the chemical properties of *wood* creasote, or, what is preferable, of the creasote which is obtained from the distillation of beechwood-tar. I am glad to believe that the ordinary dispenser, in making this pernicious substitution, is himself a victim of ignorance and not of knavery—at least so far as what pertains to the therapeutic use of the drug. And yet in moderate, or large doses, and particularly with sensitive patients, there is a very great difference in the effects of the two drugs. The one, viz., carbolic acid, may prove distinctly injurious, if not poisonous; whereas, the other, viz., wood creasote, when judiciously employed, should be followed by favorable, or perhaps negative results, but rarely, if ever, by manifest bad consequences. I am credibly informed that the only creasote in the market to-day which responds favorably to all, or most, tests of absolute purity is that of T. Morson & Son, an English product, which is mentioned on page 497 of the *United States Dispensatory*, and that of Merck, a German product. Of the two products, Morson's is the one which I prescribe and believe is purest. In order to avoid uncertainty, or risk in prescribing, it is essential at present to designate definitely the creasote that we wish to employ and afterward see to it that our prescription is taken to a trustworthy pharmacist.

Through inattention to the foregoing necessary precautions, in two instances reported to me, somewhat poisonous effects were produced by the internal use of carbolic acid, when it was intended that creasote should be taken.

In my judgment, whenever creasote is prescribed, it should be taken, at least at the commencement of treatment, in small or moderate doses. These doses should be continued a long while, or only gradually increased. If an attempt be made, especially at

first, to take large doses of creasote, in the majority of cases stomachal intolerance will soon follow and we shall be obliged either to diminish the amount prescribed, or lessen the frequency of doses, or abandon the treatment altogether for a time.

The daily amount of creasote prescribed by me for adults, in private practice, has varied usually from three to six minims, and continued frequently many months without increase, or interruption, or any evidence of intolerance. The ordinary dose of half a minim is repeated every two or three hours. It is given with whiskey and glycerine, according to the following formula:—

℞. Creasoti (beechwood) ♏vj; glycerine ℥j; spts. frumenti ℥ij. M. S. As directed.

In hospital practice, for convenience' sake, or rather so as give the patient a sufficient supply of medicine to last until his next visit to the hospital, I prescribe teaspoonful doses, each teaspoonful containing one minim of creasote, and to it are added two teaspoonfuls of water. This addition is made to prevent irritation of the throat in swallowing the dose. It also obviates irritation of the stomach in some instances. The dose is ordered every three hours, so that if it is taken with absolute regularity the patient gets eight minims of creasote in twenty-four hours. This is rarely the case, as, owing to sleep or other cause, one or two doses are usually omitted.

The formula which I have used in prescribing creasote is a very good one, as in it the creasote is perfectly dissolved and *sufficiently diluted*, thus preventing it from being unpalatable or irritating. The perfect *solution* of creasote and *its large dilution* are both strongly insisted upon by Bouchard and Gimbert in their original article as being essential points in rendering it acceptable to patients. In Jaccoud's formula, as slightly modified by me, we obtain the well-known beneficial effects of whiskey and glycerine in the treatment of phthisis.

It is well to add that only pure whiskey and glycerine should be employed, and as the latter is frequently adulterated, and hence injurious, I would indicate Price's or Bower's glycerine as being probably the best.

If creasote be administered in cod-liver oil, the amount of oil must be at least one drachm to the minim of creasote, in order to obtain a proper dilution of this drug. Otherwise, if cod-liver oil be indicated for a patient, it is desirable to give it separately, and order the creasote to be taken in the manner first advised. This I have done in several instances, and particularly when, despite the use of creasote, with complete stomachal tolerance, there has been continued loss of flesh.

In a very large proportion of cases of pulmonary phthisis that I have treated during the last year or two, whilst creasote was taken internally, antiseptic inhalations were also used by means of the

perforated zinc inhaler. As a rule, in the beginning, the inhaler was worn during fifteen or twenty minutes every three hours, and from ten to twenty drops of the inhaling fluid were poured on the sponge of the inhaler at least three times in twenty-four hours. The inhaling fluids most frequently employed by me were:—(1). A combination of iodoform, creasote, eucalyptus, chloroform, alcohol, and ether, seemingly a somewhat formidable mixture in view of its numerous constituents, but a very rational one when explained in detail. (2). Iodine, creasote, carbolic acid, and alcohol. (3). Creasote and alcohol.

The first one of these inhalants is a modification of one taken by me from Lauder Brunton; the second is that of Dr. Coghill, and, according to R. Douglas Powell, "is a favorite and much used one"; the third is, so far as I know, my own combination. The following are the precise formulæ:

℞. Iodoformi gr. xxiv; creasoti ♏iv; ol. eucalypti ♏viij; chloroformi ♏xlviij; alcoholis, ætheris, āā q. s. ℥ss. M.

℞. Tinct. iodi ætherealis, acidi carbolici, āā ℥ij; creasoti ℥j; sp. vini rect. ad ℥j. M.

℞. Creasoti ℥j; alcoholis ad ℥ss. M.

—*American Journal of Medical Science, Jan.* 1889, *p.* 14.

25.—ON HAY FEVER—ITS ALLIED CONDITIONS AND TREATMENT.

By P. McBride, M.D., F.R.C.P.E., Aural Surgeon and Laryngologist, Royal Infirmary, Edinburgh.

It is hardly necessary to remind anyone that the nose contains erectile tissue, and that although the cavernous structure is most marked under the mucosa of the inferior turbinated body, it yet exists in other situations. Everyone accustomed to examine the nose must have seen for himself how truly erectile this structure is, and how, almost in a moment, the application of cocaine or menthol may reduce a tumour-like swelling of the inferior turbinated body by a half or more. The connection between this erectile mucous membrane and summer catarrh was pointed out years ago by Hack, but does not seem to have been sufficiently noticed in recent works. During the period of erection the lining membrane of the nose is of course swollen, and upon the intensity of the process it will depend whether or not the stage of exudation—in other words, actual inflammation—be reached. It therefore seems to me that in discussing anomalies produced by the erectile nature of the nasal mucosa we must sharply distinguish two groups of cases according as the symptoms are caused by: (1) simple erection of the mucosa; (2) erection followed by exudation, one form of which is hay fever. This latter division might again be subdivided as follows: (*a*) cases in which the

symptoms are those of simple coryza; (*b*) cases in which asthma is also present.

1. *Simple Erection of the Mucosa.*—In this affection the parts most involved are, as might be expected, the inferior turbinated bodies. The troubles produced by this simple erection—often uncomplicated by other lesions—have so far been too much overlooked. Every year I see a number of cases in which the patients complain of nasal obstruction; not always present, but coming on at intervals. In these cases examination of the nose reveals no definite lesion except undue enlargement of the inferior turbinated bodies, which immediately subsides after the application of cocaine, and leaves nasal respiration perfect.

The class of persons who suffer most are (1) men (usually young adults) undergoing hard brain work, or of very neurotic temperament; (2) young women of the neurasthenic type. Medical students who are working for an examination furnish, in my experience, quite a large proportion of examples coming under the first category. One of these assured me that when sitting over his books at night a tumour sometimes actually protruded beyond the nasal orifice. Among women—as is well known—erection of the turbinated bodies tends to increase during the menstrual periods, whether the nasal obstruction be associated with catarrh or not. The discomforts caused by this simple erectile swelling of the turbinated bodies have often seemed to me to be quite out of proportion to those likely to be caused in a robust individual by temporary occlusion of the nose; but I presume that in the nervous irritability which, according to my experience, always exists in such cases the explanation of this apparent anomaly is to be sought. I shall now turn to the second group of cases, namely:

Those Cases in which Erection is Associated with the Symptoms of Coryza.—Hay fever is an affection which, as you are aware, is said to be, and probably is, due to the contact of pollen from certain grasses with the nose. The symptoms come on suddenly, and practically resemble those of a common cold. I do not propose to enter into a discussion of the vexed question as to whether pollen or dust causes hay fever. I should like, however, to point out that in quite a number of cases other causes produce phenomena perfectly analogous to those of hay fever. It is hardly necessary to mention the odours of certain flowers, the emanations from some domestic and wild animals, drugs, etc. It seems to me, therefore, that the name "vasomotor coryza," used now by not a few American authorities, is much more appropriate than such appellations as hay fever and rose cold, which yet leave a number of cases nameless. Without doubt the sudden and rapid occurrence of the symptoms after exposure to irritation can be well explained on Hack's hypothesis that erection of the turbinated bodies follows such exposure. I would submit that in cases of undue tendency

to erection on the part of the nasal mucosa we should seek the etiology in one or more of the following conditions: (1) general neurasthenia or a neurotic temperament; (2) organic changes in the nose; (3) hyperæsthesia of the nasal mucosa, as evidenced by a more than normal tendency towards sneezing and running of the nose when certain parts of the lining membrane are touched with a probe.

Let us now turn for a moment to *those Cases in which asthma is also present.* Most of those who interest themselves in nasal diseases are aware that asthma is one of those neuroses which has been frequently cured or relieved by treatment directed to the organ of smell. This may, I think, be accepted as an incontrovertible fact, whatever be the explanation. Asthma being a more or less pure neurosis—at least in many cases—it is thus shown that there exists between the nerves of the nasal mucous membrane and those nerve channels which produce asthma a very close sympathy. It follows, then, that when asthma succeeds hay fever, or any analogous affection, it is, in all probability, a nasal reflex neurosis. So far as I have been able to observe cases of nasal asthma, it has seemed to me that, when there is a distinct relation between the nasal condition and the neurosis, touching certain areas within the nose with a probe gives rise, not to sneezing, but to cough. I am, therefore, inclined to look upon the production of cough by touching the nose as indicating that treatment of the nose should be attempted in any given case. If the occasional connection between nasal disease and asthma be once admitted, it is by no means difficult to trace the sequence of events in so-called hay asthma and allied conditions.

With regard to simple erectile swelling of the inferior turbinated bodies without discharge, the treatment should be energetic exactly in proportion to the amount of discomfort caused by the abnormal condition. As these patients are usually of what we may term the nervous temperament, it is well to make an attempt to get rid of this etiological factor by attention to regimen and general health. If these measures fail, or if the discomfort experienced by the patient be very great, the application of cocaine to contract the erectile tissues, followed by the galvanic cautery, with a view to the production of an adherent cicatrix, in order to tie down the mucosa to the periosteum, will, I believe, generally have a satisfactory result.

In some cases, destruction of sensitive areas in the nose, and the application of such an anæsthetic as menthol, which, I believe, is better than cocaine, in so far that it does not tend to become less efficient through repeated use, and in that it produces no toxic effects, is not only rational, but also the only effective treatment. In quite a number of cases the use of arsenic, quinine, and valerianate of zinc is followed by distinct improvement. In these pa-

tients the hyperæsthesia of the nose is merely a local manifestation of a general neurosis, which can usually be detected by a careful investigation. To the question, "Is the galvano-caustic treatment contra-indicated in such cases?" I would answer in the negative. General nervous irritability is not always amenable to treatment, and it then behoves us to endeavour to allay the local hyperæsthesia, which is its most disagreeable manifestation.

I have no absolute cures of hay fever, or of allied conditions, to relate as a result of either cauterisation or nerve tonics, but I have seen very marked benefit from both. I believe that the introduction of the electric cautery has not rendered us independent of all the aid we can derive from cocaine, menthol, sedatives, coloured glasses, plugging the nose, and the seaside. Although I have used both general and local treatment in such cases as I have met with, I am painfully conscious that failure has been more frequent than even partial success. In one neurasthenic lady, who suffered from periodic attacks of nasal obstruction at all times, and who experienced very marked exacerbations during early summer, without there being any pathological condition of the nose further than the remains of adenoid hypertrophy in the naso-pharynx, and undue tendency to erection on the part of the inferior turbinated bodies, relief was obtained during the whole of last summer by the frequent application at home of a solution of nitrate of silver to the interior of the nose and the internal administration of tonics. In spite of this, and in spite of destruction of the mucosa over the anterior extremities of the inferior turbinated bodies, undertaken afterwards, I hear that the distressing symptoms have recurred.

It is necessary to state that in all my cases of hay fever. neurasthenic coryza, nasal asthma, etc., I always explain to the patient that in each case the application of a caustic or the cautery is of the nature of an experiment, and that no positive result can be guaranteed. It goes without saying, that in neurasthenic patients the general health should be attended to, nerve tonics administered, fatigue avoided, and full diet with long hours of sleep enjoined.

It may be that some of us have failed in getting the best possible results from surgical interference owing to undue timidity, and the successes recounted by Roe, who certainly does not err in this direction, give much food for reflection. Although I do not agree with him that in all cases of hay fever the nose is in a pathological condition, yet it may be that he has a very high ideal of what the interior of the nose ought to be; and thus, either in his attempt to produce this ideal, or in his subsequent efforts to destroy every sensitive area, does more thorough work. Theoretically it seems to me that destruction of the sensitive areas of the nose, if only carried far enough, and if it can always be carried far enough with perfect safety, must be the best treat-

ment for any coryza which has been proved to result from the contact of an irritant with the nerve-endings of the nasal mucosa. When Sir Andrew Clark uses carbolic glycerine, quinine, and perchloride of mercury as an application to the interior of the nose, and succeeds in relieving hay fever, he produces, I take it, temporary anæsthesia of the part, and so renders it less susceptible to the action of irritant particles. Probably the carbolic acid is the active therapeutic agent, and it might be worth considering whether the use of the pure acid might not be serviceable in certain cases.

Probably in most cases of summer catarrh and allied conditions the nose is the sensitive point. It may, however, be that in others the erectile swelling within the nose tends to be produced by irritation of more remote parts. It is certain that in some persons a very strong light will produce a miniature attack. It therefore behoves us to study each case by itself, for it is only thus that we can hope to arrive at a perfect knowledge concerning hay fever, nasal asthma, and allied conditions—not to speak of reflex nasal neuralgia, a much commoner affection I believe than it is generally considered.—*British Medical Journal, Sept.* 15, 1888, *p.* 605.

DISEASES OF THE ORGANS OF DIGESTION.

26.—ON GLYCERINE ENEMATA AND SUPPOSITORIES IN CONSTIPATION.

By J. P. Crozer Griffith, M.D., Assistant Physician to the Hospital of the University of Pennsylvania.

[After an interesting résumé of the literature of this popular subject, Dr. Griffith gives the Results of his own experience in 234 Cases of Constipation treated by the Glycerine Method.]

The marked success met with in the first few cases in which I used this treatment was reported in a brief note published last spring. Since that time the results have continued to be so good, that glycerine enemata or suppositories have largely supplanted other aperient rectal medication in the medical wards under my charge, as well as in other wards of the University Hospital. The collection and preservation of records of cases have been tedious and troublesome, and I am largely indebted in this report to the patient care of Drs. Leidy, Kirby, Wood, and Hay, of the resident medical staff. Up to the time when enumeration had been discontinued there had been 234 cases of constipation, occurring in the most varied medical and surgical diseases, to whom over 530 rectal administrations of glycerine had been given. When enemata were employed the amount used was usually 1 to 2 fluid-drachms, though 1 fluid-drachm was generally found sufficient. This was sometimes injected pure, sometimes mixed with a small quantity of water; the effect being much the same in either case. In some instances

20 minims (25 grains) of glycerine were enclosed in a gelatine capsule, and inserted into the rectum, and answered well in many cases. A solid suppository, made by incorporating glycerine with paraffine, was devised by Dr. Leidy, and gave satisfaction in some instances, but required to be kept from moisture, and in a cold place. By far the greatest success with suppositories, however, was obtained with those made with glycerine and soap, which I will presently describe.

The results of the glycerine treatment were most encouraging, as there nearly always followed a full, easy, and painless movement within a few minutes after its employment. The average time required after the enemata was probably five to ten minutes, though the effect was sometimes not evident for fifteen to thirty minutes, and in one case was delayed one and a half hours. Very frequently the evacuation was almost immediate. In a case of convalescent typhoid fever, for example, whose constipation, lasting three and a half days, had not been relieved by an injection of warm water, an enema of 1 drachm of glycerine produced such an immediate effect that the nurse had hardly turned away from the bed before the patient called for the bed-pan. The thought naturally arises that such prompt results must certainly be due to a strongly irritating action on the mucous membrane of the intestine. I would, however, call particular attention to the fact that this does not appear to be the case. My experience agrees with that of the writers already quoted, that it is rare that pain in the abdomen or rectum, or other symptom of real irritation precedes the evacuation or remains after it, as is so often the case after stimulating aqueous enemata have been used. In a few cases I have recorded a stinging in the rectum attending the injection, or a burning sensation, lasting a few minutes after the bowels were opened. It was found that this did not occur if the glycerine was mixed with a small quantity of water. In a few other instances there was actual rectal pain, due not so much to the action of the glycerine as to the passage of not sufficiently softened fæces.

All that has been said regarding enemata of glycerine applies as well to the effects of suppositories, except that the latter require somewhat longer to operate, owing to the time needed for their solution in the bowel. They are also somewhat less certain in their action, on account of the medicament contained in them. Glycerine usually produces but one stool, and this is soft rather than liquid. It is for this reason that the remedy sometimes fails in obstinate constipation, the very hard scybalous masses not being softened enough. Yet, I am by no means certain that, even in most cases of this kind, soap and water have, as a rule, any superiority, for both the enemata and suppositories of glycerine were often found useful in the enforced constipation following gynecological operations, such as perineorraphy, where it was de-

sired that the fæces should be soft, and that straining be avoided. There were instances, too, and that not infrequently, in which glycerine produced an easy passage, but in which soap and water either effected no movement at all, or did not soften the scybala sufficiently to prevent painful evacuations. This method of treatment was found particularly valuable in cases in which opium in large doses had been administered during a considerable period. It failed in no such instance, though turpentine with soap and water was often ineffectual. I cannot speak from experience as regards the contra-indication to the use of glycerine in ulceration of the rectum, to which Anacker alludes. The local employment of it in dysentery, already referred to, would indicate that it is not necessarily to be avoided as a laxative when an ulcer exists. I have never seen the drug lose its effect after continued use, and have not found it necessary to increase the dose, nor does there seem to be any tendency to constipation remaining after the treatment is discontinued.

Glycerine is not, of course, an infallible remedy, and, like all other aperients, will sometimes fail utterly, even in cases in which it has been at other times effectual. My experience with it has, however, been sufficiently extended to justify the conclusion that in it we have a safe, prompt, and reliable means of obtaining an evacuation of the bowels; more convenient of employment, and more pleasant to the patient than are large aqueous injections, and certainly superior as regards the absence of irritation of the rectum.

Finally, I would again call attention to the administration of the drug in the glycerine and soap suppositories referred to, as an elegant means of exhibiting the remedy in private practice. I have made a somewhat extended trial of these, modelled after those manufactured by Dietrich. Messrs. Henry C. Blair's Sons, apothecaries, of this city, have taken great trouble in perfecting the method of their preparation, and now offer them for sale. 50, 66, and 75 per cent. of glycerine, with soap, was not found reliable. Finally, by using an especially hard castile soap 90 per cent. of glycerine was incorporated in suppositories weighing 52 grains each, and these were efficient in the majority of cases. It is to be remembered that the total amount of glycerine in each (46 grains) is not quite two-thirds of that generally used for an enema (viz., 1 fluid-drachm, 75 grains). If, therefore, a case does not yield to one of them, there would be no objection to giving two at a time. They are very hygroscopic, but when wrapped separately in tin-foil keep very well, and I can imagine no more elegant method of producing an intestinal evacuation than by their use. Very neat little suppositories for babies, holding 10 or more grains, are also supplied. Mr. James J. Ottinger, apothecary, of this city, has sent me samples of 90 per cent. glycerine suppositories made with a dry stearine soap, and now offered for sale. He has succeeded in pre-

paring them in such a way that the covering of tin-foil is dispensed with. They are not very hygroscopic, even on exposure to air for some weeks, and present a handsome appearance. I have not myself had any experience with them. Messrs. Parke, Davis and Co. also manufacture 90 per cent. soap suppositories, samples of which they have sent me. I have not yet had the opportunity of trying them.

Though glycerine suppositories are somewhat less certain than are the enemata, yet they are not only much more convenient for private practice, but, owing to their rather slower action, I found them entirely unproductive of discomfort, even in the occasional instances in which the enemata have caused slight burning. The largest rectal gelatine capsules hold not more than 25 grains; an amount too small to be generally useful. Their action is uncertain, and even when two are given at a time, a movement does not occur for thirty to forty minutes. Another objection is that, if sold already filled, they rapidly soften and allow the glycerine to escape. The hollow cacao-butter suppositories are not to be recommended on account of the size required to hold a sufficient quantity of glycerine, and the large amount of inert matter employed. I cannot, therefore, but consider those made with soap the most eligible form.—*Medical News, Dec.* 8, 1888, *p.* 632.

27.—ON GLYCERINE INJECTIONS IN THE DIARRHŒA AND PROLAPSE OF CHILDREN.

By George Rice, M.B., C.M.Edin., Resident Medical Officer, South Metropolitan District School, London.

I was led to think of the use of glycerine injections in diarrhœa through some remarks which fell from Sir Joseph Lister when I was consulting him concerning a case of another kind. I have employed it in cases of constipation with excellent results, but the following cases will I believe show that it is also useful in certain forms of simple diarrhœa:—

Case 1.—A. G. M., male, aged 4, was admitted to the school infirmary, as he appeared to be losing flesh. On admission he was found to be suffering from diarrhœa, his motions being frequent and offensive, and every time the bowels were moved there was prolapse of the rectum to a very great extent. Blood was also passed *per anum*, and he was in a very weak condition. Various remedies were tried, but he continued to lose weight; and we became very anxious about his state. I determined to try glycerine, and accordingly two drachms were injected into the rectum. This at once checked the diarrhœa, but as it did not entirely cease I repeated the injection on the second day. From this time the boy began to improve, and although the motions thereafter were not nearly so frequent nor so offensive, nor

did the bowel come down so much, I ordered a third injection, which had the desired effect. After the diarrhœa and hemorrhage had ceased the bowel still came down when he had a motion, but as he gained strength very rapidly the prolapse presently ceased to recur. The diet consisted of cold boiled milk and cold beef tea, with port wine and occasionally jelly. This was a very bad case, and the disease had existed for some time before the glycerine was tried.

Case 2.—H. M., female, aged 4, was admitted with diarrhœa and prolapse of the bowel. The attack was very severe, but in this instance no time was lost in trying other remedies, and two drachms of glycerine were at once injected. The effect was almost magical. The symptoms were checked almost at once, and the little patient, who had gradually lost flesh during the diarrhœa, rapidly put it on again.

Case 3.—N. R., female, aged 6, suffered from frequent diarrhœa, the discharges being very offensive, and accompanied by excessive wasting. She had been in the infirmary some time, and various remedies, with careful dieting, had been tried, but no benefit was experienced until the glycerine injection was used. As in the other cases, only two or three injections were required to effect a cure, and the little girl was soon enabled to resume her school work. There was no prolapse here, and as in the other cases, there has since been no recurrence of the trouble.

Cases 4 and 5.—B. F., male, aged 7, and J. F., male, aged 7, had troublesome prolapse of the rectum unaccompanied by diarrhœa. In these cases glycerine injections acted so beneficially that in a few days there was no return of the trouble, and the patients were discharged in good health.

I have also tried this remedy in one or two cases where looseness of the bowels supervened in the course of other affection, such as pneumonia, and the patients' state was such as to render it difficult to decide what was the best thing to give so as to cause the least possible depression. The following cases will serve as illustration:

Case 6.—E. R., male, aged 6, had a severe attack of pneumonia, with a continued high temperature of over 105° for nearly twelve hours. His motions became very loose and frequent, and he was evidently being weakened by the diarrhœa. I at once injected two drachms of glycerine, and it acted with such singular promptitude and success that it was not necessary to repeat it. The temperature fell after the injection, and the disease pursued its normal course.

Case 7.—M. A. S., male, aged 5, also suffered from pneumonia. His temperature was not excessively high, but his lungs did not clear up well as the disease pursued its course, and he became very weak; this was the second attack within

twelve months. Diarrhœa supervened here as in the previous case, but was at once arrested by a glycerine injection.

Glycerine has been largely used lately in the treatment of constipation, and the paper of Dr. G. A. Carpenter in the *Lancet* of November 10, 1888, shows that in children it is markedly successful; but I have seen no mention of any cases where it has been used for the opposite condition.

I must apologise for the meagreness of these notes, as when I began to use the remedy I had no intention of ever publishing anything about it. Having, however, mentioned a few of the details I have above given to my friend Dr. Lauder Brunton, he strongly impressed upon me the expediency of calling attention to the facts. I do not pretend to say how glycerine acts in these cases, though it is possible that both the diarrhœa and the constipation have a common cause. I will for the present content myself with the statement that in my hands glycerine has proved a valuable remedy, especially in the case of children suffering from diarrhœa or prolapse, and moreover that the injections are easily made, that they seem to cause neither pain nor discomfort, and that their beneficial action is very prompt and complete.—*Practitioner*, *Dec.* 1888, *p.* 418.

28.—ON THE TREATMENT OF PERITONITIS.

By Arthur V. Meigs, M.D., Physician to Pennsylvania Hospital.

The question how to treat peritonitis is one of the greatest importance, and upon the decision eventually reached will in the future depend the lives of many patients. Should the leaders of our profession decide that the administration of saline purges is the best treatment, and this be for a few years taught in the schools, the ordinary practitioner will soon acquiesce. If such a consummation is to be deplored, now is the time for us who are of the contrary way of thinking, to protest. To me it seems clear that before any conclusion can be reached, it must first be acknowledged that peritonitis, as ordinarily seen, diagnosticated, and treated by physicians, is so different from the lesion or disease which has been successfully dealt with by surgeons by the administration of saline purges, that it must be recognized that, from the standpoint of therapeutics, the two questions are as far apart as though they were two widely differing diseases.

The treatment that will give the best results, according to my view, is the following: in all cases in which no physical obstruction can be diagnosticated, for which operation must be at once recommended, and this should include doubtful cases in which operation may subsequently become necessary, there should be prescribed liquid diet, small quantities every two hours, and every two hours a quarter of a grain of opium, and one-twelfth of a grain of extract

of belladonna. To this may be added, if it should seem advisable on account of pain, the administration twice, or at the outside four times in twenty-four hours, a one-grain powdered opium suppository. At the same time injections of warm water, with or without soap, should be given once to three or four times daily. If flatus is passed, the case continues to be a very hopeful one. This course should be rigidly adhered to for from 24 hours to five days, or possibly longer, when the time will have arrived at which it becomes necessary to consider the propriety of using some sort of aperient.

Purgatives are given in peritonitis for two distinct purposes: first, to increase the peristalsis, and thus overcome obstruction; and, second, to induce large watery movements, for the purpose of directly depleting the abdominal, and especially the intestinal, bloodvessels. After operations, inflammation in greater or less degree is so common, and we are so well aware that it is liable to occur, as to be always prepared to meet it. This being the case, it may be met in its very incipiency, and if inflammation can ever be aborted, it is under such circumstances. The explanation of the success, therefore, of surgeons in treating peritonitis with large doses of saline purgatives would seem an easy one, for they deal with a stage of the disease which never comes under the management of physicians, as people in the early stages of the disease do not seek advice, and, besides, if they did, the differential diagnosis between idiopathic peritonitis in its earliest stage and enteritis or mere intestinal irritation would be an impossible one. No one, I think, should deny surgeons the credit their courage deserves for having instituted this revolutionary method of treatment, for, measured by our old standards, it is revolutionary; but at the same time we must not err upon the other side, and with undue haste conclude that the method is applicable to all cases. I have long been of the opinion that the old surgical practice of shutting up the bowels for a week, with opium, after an operation for hemorrhoids, was a bad method.

Having, then, quieted our patient somewhat during the first few days of attendance, with injections and liquid food, and belladonna and opium, and at the same time been very careful not to induce narcosis, or in the least to depress the respiratory forces, for, if we do, the remedy will be worse than the original disease: we must, as already said, consider the propriety of getting the bowels moved. The decision in regard to the precise moment at which this attempt is to be made is, in my opinion, one of the most delicate questions that can arise in therapeutics, and gives to each of us, when we meet it, an opportunity to show a real genius for the treatment of disease. The medicine, however, which shall be given is very easy to decide upon—here there is no inflammation in its early stage, and therefore there can be no question of aborting it. Salines could only act upon the bowels like other drugs, relieving tension,

if you like, by abstracting water directly from the intestinal blood-vessels; but, so far as the mere moving of the bowels is concerned, they are by no means so effective, or, as the laity call it, "searching," in their action as some of the vegetable purgatives. Any one who has been called upon to treat cases of fecal accumulation will have learned how useless and ineffective are salines if the bowels are very sluggish, while small and repeated doses of vegetable purgatives are perfectly satisfactory, and certain in their effects. In such cases salines, and even castor oil, will induce large watery stools, but no fecal matter is brought away, and it seems as though the fluid material had come from below the accumulated feces, or came by, and the patient is no better off than before, though probably he will have suffered much pain. No better combination can be given than a pill consisting of a twelfth of a grain of extract of belladonna, a quarter of a grain of extract of nux vomica, a quarter or an eighth of powdered aloes, and a half or one grain of rhubarb. This should be given at first once or twice in twenty-four hours, and, if violent pain be set up—which, however, seldom happens—it should be stopped, and the opium and belladonna every two hours used again for a day or two, when the attempt with the aperient may again be made. After a day or two the pill may often be given every four hours, and I have often seen the obstruction give way under this treatment, and the patient entirely recover.

It would be most unfortunate, it seems to me, for the science of medicine, and still more so for those who in the future are to suffer from peritonitis, if the treatment of the disease with sedatives should be entirely abandoned, as has been recently recommended. Let us look at the question reasonably, and without prejudice, and in the future assign to one class of patients operation by a competent surgeon, and saline purgatives afterward, if those skilled from a study of the subject in that particular direction judge that to be the proper course; and to the other, a reasonable use of anodynes and injections, with moderate doses of vegetable laxatives when the time comes for their administration. Because, in the past, the sedative method of treatment has been abused, and patients have been hurried out of the world by the unwise management of incompetent physicians who have narcotized them, is no reason why we should cast aside what is good in the method, any more than it would be wise for us now to assume that, because the administration of saline purges is advisable in the surgical treatment of some cases, it is, therefore, to be looked upon as a panacea in the disease, and the treatment to be recommended in all cases.

For my own part, I am a firm believer that the disease may arise idiopathically, and when I say this, I mean from an attack of enteritis or violent indigestion, or from chilling of the body, just as I believe pleurisy may arise, and in such cases it is reason-

able to suppose that the inflammation very soon becomes more or less generalized, though, of course, it must have had its origin at some point. Such cases as these, if it be conceded that they ever arise, are not amenable to surgical treatment, for there is no point of special obstruction, and operation could not effect any good, unless by merely cleansing.

In conclusion, I cannot perhaps better emphasize the correctness of the statement that the treatment by sedatives should not be abandoned in all cases of peritonitis, than by calling attention to the fact that in many cases in the past, and the same thing is certain to occur again in the future, post-mortem examination has demonstrated that the disease was so extensive, or of such a nature as to be necessarily incurable. Under such circumstances I think no one will dispute that the province of the physician is to do what he can to soothe pain, and to make the last days and hours of the patient as endurable as circumstances permit, and no other one drug will conduce so much toward this end as opium. —*Medical News, Dec.* 8, 1888, *p.* 641.

29.—ACUTE TUBERCULAR PERITONITIS IN THE ADULT.

By Samuel Fenwick, M.D., F.R.C.P., Physician to the London Hospital.

[The cases under review by Dr. Fenwick in this article were collected from the records of the London Hospital.]

In this form of tubercular peritonitis the appearance of the disease was generally sudden, and, unlike the slow commencement of typhoid, the patient was usually at once compelled to go to bed. In only one the disease was ushered in with severe pains of the ankles, headache, and febrile symptoms similar to those of rheumatic fever; but these soon disappeared after his admission into the hospital. In ten out of eighteen cases in which the primary symptoms are recorded, the chief complaint at first was of pain and tenderness of the abdomen. The pain varied greatly in amount. In only one the patient is described as lying with the legs raised; but in most of them it was severe from the first. In one instance it was limited to the epigastrium, and was increased after food—a condition that would render the malady easy to be confounded with gastric ulcer; in another the pain was entirely referred to the iliac region, and, as there was also tenderness on pressure, there would be considerable chance of the pain being regarded as due to inflammation at or around the cæcum. Distension of the abdomen was nearly as common at the commencement of the illness as pain and tenderness, eight of the whole number having exhibited this condition. In some cases, however, that have come under my own notice, there have been neither pain, tenderness, nor distension at an early period of the illness. In

most the bowels were at first constipated, but in several the complaint was ushered in with diarrhœa. It is, however, worthy of remark that the distension and diarrhœa occurred together in only two out of eighteen cases. Vomiting, more or less continuous, is recorded as an early symptom in four cases, and in only one vomiting and diarrhœa occurred together. Rigors or chills are mentioned only in one case.

The initial symptoms, then, in this form of the disease may be laid down as a sudden pain in the abdomen, not so severe as in ordinary peritonitis, but attended by tenderness on deep pressure, accompanied by constipation or diarrhœa, and sometimes by occasional vomiting. In addition to this, there are general feebleness, increased rapidity of the pulse, and an elevated temperature, but this rarely rises above 102° at the commencement.

During the progress of the case pain of the abdomen was the most prominent of the local symptoms; it varied, however, in different cases, both as to its severity and its position. In twelve out of eighteen, it was sufficiently pronounced to attract the attention both of the physician and of the patient, but in the remaining six it was so slight that it might have been easily overlooked. When it was severe it sometimes disappeared for days together, or varied in intensity during the illness. In a few instances it was referred to the whole abdomen; more generally it affected first one part and then another; in many cases it was limited to the right hypochondrium, or to the epigastrium, and when in this latter situation it was sometimes increased by food. In twelve cases there was marked tenderness, increased by deep pressure, but in only one the weight of the bedclothes was sufficient to produce suffering. Mostly the tenderness was local, and varied in intensity during the progress of the disease. In five there was marked tenderness, although pain apart from pressure or movement was not complained of. In two instances where there was continuous pain there was never any tenderness. There was, in fact, a complaint either of continuous pain or of tenderness in every case except in one, in which severe pain was the first symptom; but it soon disappeared, and did not return.

Vomiting was noted as frequent in only four, and in two others there was constant nausea, although vomiting did not occur. In three it is especially remarked that vomiting never showed itself. Diarrhœa was severe and continuous in twelve out of the eighteen; in the remainder it occurred only occasionally. In eight constipation is mentioned as alternating with diarrhœa, but, as a general rule, the bowels were relaxed towards the termination.

In every instance the temperature was elevated, but it presented no typical course as in typhoid. Generally speaking, it varied from day to day, rising in the evening and falling in the morning, and in most the difference between the morning and

evening temperature amounted to one or two degrees. In two cases it varied between 99° and 100°; in one between 100° and 101°; in five from 100° to 102°; in two between 100° and 103°; in four between 102° and 104°; and in two between 101° and 105°. In all, the temperature was very irregular, and in one it fell below the normal shortly before death.

The pulse was generally quick from the first, but varied greatly in different cases: it was rarely of the normal frequency, and became more rapid as death approached.

Loss of flesh was a prominent symptom in all, and in many proceeded to an extreme degree. The appetite, with few exceptions, was defective from the commencement, and remained so until the end of the case. The tongue in every instance in which its condition is mentioned was "foul" or "furred," or "with red tip and edges"; in a few it became dry. Thirst was almost constantly present, and varied in severity withthe rapidity of the disease.

Chest symptoms showed themselves in the majority of cases, but the abdominal usually remained the most prominent to the close of the case. Cough is mentioned as very distressing in seven, but the amount of expectoration was rarely profuse. When dyspnœa presented itself, it was mostly as the result of the pushing upwards of the diaphragm by the accumulation of gas or fluid in the abdomen, and not as the result of any pulmonary changes.

We may sum up the clinical characters of this form of tubercular peritonitis by saying that they consist of more or less acute pain of the abdomen, increased by pressure, accompanied by elevation of temperature of an irregular kind, the evening temperature being usually much higher than that of the morning, by increased rapidity of pulse, rapid loss of flesh and strength, thirst, loss of appetite, and continuous diarrhœa, or by diarrhœa alternating with constipation.

The cases of acute tubercular peritonitis may be included in two groups. In one the febrile symptoms are the more prominent, and those relating to the abdomen are comparatively slight; such cases closely simulate typhoid fever. In the other the abdominal symptoms are the most marked, and the fever is moderate; such cases resemble ordinary peritonitis.

The physical signs varied in different cases, and also at different periods of the same case. In seventeen out of the eighteen the abdomen is stated to have been much distended; this was in most present from the first, but increased as the disease progressed. In six there was more or less fluctuation to be observed, but it was, as a rule, only in the earlier stages that fluid could be distinctly made out, and it was gradually absorbed before death. In the slighter cases of effusion the percussion note was dull only in the hypogastrium and in the flanks, and clear in the rest of the abdomen; but when the fluid was retained by adhesions, the dull

parts alternated with others that afforded a tympanitic note. In most instances, as the fluid was absorbed dulness disappeared, and the distended abdomen became everywhere tympanitic on percussion.

In three cases tumours could be detected in the abdomen, and in two of them the hardness felt on palpation was proved by post-mortem examination to have been the result of induration of the omentum. In the third they were caused by enlargement of the mesenteric glands, were movable by pressure, and varied in the place they occupied, probably in accordance with the variation in the amount of distension of the intestines.

The stools varied greatly in character in different cases, but some are recorded as being like pea-soup, and resembling the stools of typhoid fever. In one instance the typhoid-looking stools were accompanied by an eruption of rose-coloured spots on the abdomen that disappeared on pressure, although post-mortem examination proved the absence of the characteristic ulcerations of enteric fever.

The diseases with which we are most apt to confound acute tubercular peritonitis are typhoid fever and acute non-tubercular peritonitis, and in some instances the resemblance is so close that it is only by great care and watchfulness that we can avoid falling into error.

As a general rule, tubercular peritonitis of this kind begins suddenly, whilst typhoid is usually preceded by a period in which the patient has been weak, feeble, and feverish. In the former, pain in the abdomen is more marked, and there is tenderness over different parts; whilst pain in the latter is rarely severe, and any tenderness that may be present is confined to the iliac region. In tubercular peritonitis the temperature rises at once, and not regularly, as in enteric fever, and the pulse is usually more rapid. As the case proceeds the temperature varies more in peritonitis, spots are rarely observed, and the stools have not generally the typical appearance of those passed in typhoid; whilst at a later period the persistence or frequent returns of abdominal pain and tenderness and of vomiting, the variations of the temperature, the alternations of constipation with diarrhœa, and the increasing prostration, will in most instances enable you to distinguish between these diseases. In addition to these differences, you will in many cases be able to render your diagnosis more certain by the discovery of fluid in the peritoneum, or by the detection of a tumour in the abdomen; or you may find the signs of effusion in the pleura or of a consolidation in the apex of one or both lungs.

Still more difficult is it to distinguish between acute tubercular peritonitis and ordinary peritonitis when the former does not assume from the first the typhoid form. In many cases I believe it is impossible to arrive at a certain conclusion in the early stage, for both may attack persons previously healthy, both may be ushered in by similar abdominal symptoms, and it is only by

watching the progress of the disease that you can form an accurate opinion. As a general rule, the pain, tenderness, and vomiting are less distressing in the tubercular form, the temperature is lower, and there is more usually diarrhœa than constipation. As the disease progresses, the abdominal symptoms recur from time to time instead of slowly subsiding, the temperature remains high, emaciation becomes more marked, the effusion into peritoneum is very slowly absorbed, and you may discover signs indicating effusion into the pleuræ or pulmonary consolidation.

As regards the treatment of acute tubercular peritonitis in the adult. In the typhoid form I have usually treated the case as if it were one of enteric fever; that is, the patient has been kept at rest, the food has been restricted to liquids, and cold sponging has been employed whenever the temperature has been unduly high. Quinine in moderate doses in combination with opium has been prescribed to relieve pain and to check diarrhœa. In the cases in which the symptoms were chiefly abdominal the treatment has been directed as in ordinary peritonitis; poultices and hot fomentations have been applied to the abdomen, and small doses of opium have been given to relieve pain and diarrhœa. You must, however, be careful not to induce constipation, for it is usually followed by attacks of vomiting that quickly reduce the strength of the patient.

You may ask whether the washing out of the peritoneum, which is so successful in some cases of suppurative peritonitis, is likely to prove beneficial in this kind of case. I have never seen it tried, chiefly because the real nature of the disease has more frequently been suspected than actually diagnosed during life; but I do not think it would be of much value, as I have found the fluid serous, not purulent, and the patients have seemed to me to sink from the general acute tuberculosis, and not from the effects of the inflammation of the peritoneum.—*Lancet, March* 9.

30.—ON TYPHLITIS, ITS NATURE AND TREATMENT.

By Sir Dyce Duckworth, M.D., Physician to St. Bartholomew's Hospital, London.

Let me very briefly recall to your memory the essential features of the anatomy of the caput cæcum coli and its vermiform appendix. It is commonly described as situate in the right iliac fossa, and as invested by the peritoneal coat everywhere but posteriorly. Mr. Treves has, however, pointed out that the cæcum is most frequently situated, not in the right iliac fossa, but on the psoas muscle, or rather on its fascia, and that it is generally completely invested by the peritoneum. A meso-cæcum does, however, sometimes exist; hence you may meet with a cæcal or appendicular hernia. The arrangement therefore varies, the cæcum being some-

times comparatively fixed. The relation to the psoas muscle is important, because, as I have observed, a degree of lameness sometimes follows typhlitis, due to implication of this muscle, whereby the thigh is hampered in flexion on the pelvis. The vermiform appendix of the cæcum is of supreme importance in relation to inflammatory mischief affecting this portion of the bowel, inasmuch as the majority of cases of typhlitis originate here. You are aware that it is but a rudiment of the long cæcum met with in most mammals. It lies, you remember, behind the cæcum or behind the ileum and its mesentery, arising from the lower portion of the cæcum and taking a direction upwards and inwards, coiled on itself and terminating in a blunt point. Its length is from one to nine inches, being commonly about three inches in the adult. It opens by a small orifice into the cæcum, has similar coats, and possesses abundant solitary follicular glands on its mucous lining.

The vermiform appendix must, even in its rudimentary state in man, be practically regarded as a part of the alimentary tract. In most cases, after death, fæcal matter is found in it. Without doubt, the most common cause of typhlitis is ulceration of the appendix. In discussing causation I employ the term "typhlitis" as a generic one, to indicate all inflammatory affections of the cæcum, appendix, and their immediate investments; and I do not commend to your acceptance the barbarous terms, sometimes used, of "appendicitis" and "peri-cæcal inflammation." The ulceration may arise in various ways. Note, first, that no symptoms comparable with typhlitis, as clinically recognised, arise in the course of enteric fever, where, as you know, ulceration is usually abundant in the neighbourhood of the cæcum. Ulceration sometimes occurs in the appendix in this fever, as also in dysentery, and may lead to rupture, but this is of rare occurrence. Tubercular disease with ulceration is found in the same positions and glands as in enteric fever, and it may occur, too, in or near the cæcal appendix and lead to perforation, though this also rarely happens. I consider the causes of ordinary typhlitis to be mainly two: first, *the presence of some irritant concretion or foreign body in the appendix;* and secondly, *intestinal catarrh*, the result of exposure to cold, or irritation from improper diet. Both causes may, I believe, operate together.

Very little is known as to inflammatory conditions of the cæcum leading to ulceration and perforation. Cases of true cæcitis are met with clinically, and do not prove fatal. Pus may penetrate the cæcum from abscess elsewhere, as in the pelvis, but this is not typhlitis. In the fatal cases we are almost certain to find ulceration and perforation of the appendix. Distension of the cæcum by hard fæcal matter may sometimes give rise to symptoms of cæcitis, and ulceration with perforation may occur in this part. If

perforation occurs into the peritoneal cavity the case will prove fatal. If the ulceration opens into the part of the bowel uncovered by peritoneum where such part exists, which is not always the case, a perityphlitic abscess is formed, which may open in various situations, as into the pelvis and rectum, passing along the psoas and iliacus muscles into the thigh, out into the buttock with the pyriformis muscle, or into the urinary bladder, groin, or scrotum. Or sometimes, as I have known, or rather suspected, the abscess discharges itself into the bowel by the opening which led originally to its formation, leading to favourable issue.

In the case of the appendix the series of events may be as follows: Foreign bodies—such as a pin, nail, bristle, fruitstone, shot, gall-stone, or a mass of indurated fæcal matter—may by their presence set up inflammation and ulceration, which finally perforates. I show you a series of preparations from the museum which illustrate some of these disasters. Again, a catarrhal state of the mucous membrane may be induced by exposure to cold or by intestinal dyspepsia, which leads to occlusion of the opening between the appendix and the cæcal cavity. Tumefaction here leads to stenosis and closure of this, and hence any contents which in health are simply fæcal become inspissated and act as a foreign body. As a result of catarrh alone, the appendix thus shut off may become filled with thick mucus and a waxy-like matter, probably formed from fæces, or be distended so as to contain several ounces of mucus, reminding us of a similar occurrence sometimes met with in the gall-bladder when the cystic duct is closed. The appendix in this condition is liable to such ill-nutrition of its walls that ulceration with perforation is imminent. In one case I found a caseous gland near the appendix, which had led to inflammatory changes round it, and caused it to bend on itself, be constricted, and so to imprison a plug of hardened fæces, which acted as the exciting cause. This was in a boy aged eleven years. The perforation varies in size, and may fail sometimes to be discovered. It is usually large enough to admit a goose-quill, but may be smaller or much larger, and with subsequent sloughing a large part of the substance of the appendix may be removed, leaving a mere tag to hold the dependent portion, or, again, the slough may entirely divide the structure. The result of the perforation is invariably an abscess at its site, and hence you find a swelling in the right iliac fossa of greater or less size, according to the amount of pus formed, which may vary from an ounce or two to a pint or more. In the abscess-cavity is found the ulcerated point, with or without the foreign body or concretion, according as it is present or not. Sometimes a layer of lymph may hide the perforation. I will urge you to verify all these statements for yourselves in the dead-house, and you have no lack of opportunities, since a session rarely passes without our having several of these untoward cases.

I can enter at no greater length into this part of the subject, and must now proceed to mention the symptoms of typhlitis.

The first and most urgent is that of pain in the right iliac region, usually very severe. Next follow the ordinary symptoms of peritonitis, more or less extensive in various cases, with distension, perhaps vomiting, and pyrexia, not usually exceeding a temperature of 102° F. The bowels are generally confined, this being due, as I believe, to the peritonitis. The face is flushed; the expression anxious. The pulse is rapid and soft. There is dorsal decubitus, and the legs may be drawn up. A hard, phlegmonous, and tender tumour involving the cæcum is not unfrequently found. The pain may be referred to other parts of the abdomen, and if there is distension there may be no distinct indications of the locality primarily affected, so that we may be thrown off our guard, and not suspect mischief at the cæcum or appendix. In some cases there may be no appreciable fulness or tumour in the right iliac region, and this is explained by the fact that the trouble being in the appendix, and not due to distended cæcum, is situate deep down in the abdomen and below the caput coli. You will in such a case, however, hardly fail to observe an important sign which helps to localise the mischief. I refer to resistance on the part of the right oblique, transversalis, and rectus abdominis muscles, which are called into action to protect the subjacent sensitive parts, contrasting thus very markedly with their fellows on the left half of the abdominal parietes. This is very significant. Failing this sign, you may in some cases suppose you have to deal with either intestinal obstruction from some cause, or with general peritonitis in association with this, or excited by some other lesion. When the bowels act, as they sometimes do freely, you will have no anxiety as to obstruction. If there is constipation, you will next proceed to do what you must always do in such cases—viz., examine for any herniæ, and also explore the rectum with the finger. With the existence of tenderness and tumour in the right iliac fossa, the diagnosis is almost complete in the presence of the other symptoms just referred to. That you may be guided to proper treatment in any case requires that you know the outcome of cases of this nature; and before I proceed to read to you the particulars of my cases, and go on to allude to treatment, I will mention the usual courses followed by the different disorders which are included under the term "typhlitis." In any case we are in presence of a grave disease, and we can never be quite free from anxiety about it until signs of distinct resolution occur. Many cases of typhlitis happily terminate favourably. It is probably true that those which are least dangerous are those which early present an iliac tumour involving the caput coli and not the appendix. These are cases of cæcitis, due to impaction of indurated fæces, and there may or may not be perforation of the coats of the bowel, although

inflammatory material is thrown out around its serous coat—a true perityphlitis. With simple treatment and careful dieting such cases often resolve and do well. The gravest cases are those involving the appendix, when perforation and consequent abscess occur. There is generally a tumour present, and the patient is obviously very ill. The symptoms here may supervene suddenly. There may have been none previously of any moment indicating disease of the appendix, but at once the patient is in peril. If the contents of the appendix have reached the peritoneal cavity directly, death is certain within thirty-six hours, unless bold measures are tried with success. In such a case, there is incoercible sour vomiting, generally of grass-green bile, thready pulse, low temperature, suppression of urine, cold clammy skin, and collapse from general peritonitis, the mind remaining clear. If the contents of the appendix have not reached the peritoneal cavity, the abdomen becomes blown up, vomiting ensues, and pyrexia occurs. General peritonitis usually sets in, and a fatal issue occurs in a few days. Dr. Pepper has observed that the pain of perforation is apt to radiate to the middle line of the abdomen, and sometimes into the genitals, and in many of these cases he has noted free urination when vomiting has been absent. Such, then, are the courses taken by the two principal forms of typhlitis. (Sir Dyce Duckworth then narrated four interesting examples of typhlitis, which are here omitted for want of space.)

These cases occur mostly in males, and are common in boys and in the earlier decades of life. In the majority you may suspect disease of the appendix rather than of the cæcum. Simple treatment by opium and liquid food, with poultices, is proper at first, and if pain is considerable you may apply from four to eight leeches over the part. Later, you have to consider the propriety of operating so as to reach pus, if it be present, and to remove the appendix. As a rule, you must carefully avoid all forms of aperient medicine. The best guides to surgical interference are the persistent vomiting and tympanites, having always due regard to the general condition of the patient. If you believe that perforation and suppuration have occurred, an operation is warrantable, sometimes even when appearances are very unfavourable, for death is almost certain to ensue. It is a very nice determination to make, but in the present state of surgery one may have fewer apprehensions than formerly. It is important to guide you in the subsequent treatment of such cases as happily recover from urgent symptoms. Great care is necessary in diet for a long time afterwards—for, I shall say, not less than twelve months. Only soft and bland food must be taken, and every particle that is hard and indigestible must be withheld. In particular, no crude vegetables or fruits containing seeds should be taken, and the skin and hard parts of all food should also be withheld. The patient must be taken into

full confidence, and be made to understand the possible risks of carelessness in these respects.

Relapses are frequent in cases of typhlitis, and the reason probably is that *complete* recovery is not established, and the parts are left prone to irritation on slight provocation. Exposure to cold will cause relapse—possibly from intestinal catarrh, which leads to renewed trouble in the appendix; hence great care must be taken to avoid chills and exposure. Irregular meals are amongst aggravating causes of typhlitis in a predisposed subject, improperly cooked food being perhaps hastily taken, or too large quantities at unwonted times. In many cases there is a history of a heavy or indigestible meal having led to sudden onset of symptoms sooner or later. Care is also necessary with respect to aperient medicines, which should be of simple and unirritating character. Castor oil alone, or with olive or almond oil, is one of the best, and cascara sagrada is likely to prove helpful for occasional use.—*Lancet, Oct.* 6.

31.—ON PERI-CÆCAL INFLAMMATION.

By George J. Preston, M.D., Prof. of the Practice of Medicine, Baltimore Polyclinic.

Much unnecessary confusion has been caused by the multiplication of the supposed different forms of peri-cæcal inflammation. Practically there are but three forms of such inflammation: 1st. Simple *typhlitis stercoralis*, where the trouble is confined strictly to the cæcum, and in which the inflammatory symptoms never reach a high grade, and in which suppuration or perforation rarely or never occurs. 2nd. *Perityphlitis*, in which the cæcum, with its peritoneal investment, together with the *appendix*, is involved. This form nearly always begins with inflammation of the appendix, generally goes on to suppuration and the formation of an abscess which is for the most part circumscribed. 3rd. *Appendicitis*, which is not recognizable with any certainty during life, unless perforation occur, followed by general peritonitis.

Omitting simple typhlitis stercoralis, we find inflammation in the appendix beginning as a simple catarrhal process, going on to ulceration involving all the coats, and finally terminating in necrosis and perforation. Undoubtedly, in many instances the process never gets beyond the catarrhal stage and is not recognised during life. In the graver forms the course ends rapidly in perforation and general peritonitis, which, up to this time, has has proved nearly invariably fatal. This issue is averted in some cases by adhesion between the appendix and neighbouring viscera; or the inflammation, starting in the appendix and involving all its coats, may travel on to the cæcum, and then we have what is known as perityphlitis. Generally speaking, such cases as these usually go on to suppuration. Fortunately, in the majority of

cases a circumscribing adhesive peritonitis shuts off the abscess from the general peritoneal cavity. This abscess, starting, as has just been shown, in the appendix in most instances, and often due to perforation of this latter, may reach a large size—several pints of pus—and may extend in many directions, or remain localized.

The pus is in most instances exceedingly fœtid, from its communication with the gut, and small masses of fæcal matter may be found in it. Occasionally large quantities of scybalous fæces have been observed, showing a connection with the large bowel. As a rule, however, the cæcum is not perforated; frequently the whole appendix has been found to have sloughed off. Peri-cæcal inflammation is especially a disease of males, and is generally seen during adolescence.

In typhlitis stercoralis, fæcal impaction, setting up more or less inflammation, is the undoubted active factor, since in the vast majority of cases free evacuation of the bowels gives immediate relief. In the other two classes a somewhat similar cause prevails. After operations for the evacuation of peri-cæcal abscess, and on post-mortem examination, there has been found in the appendix a great variety of small objects—fruit seeds of many kinds, pills, shot, hair bristles, fish-bones, needles, gall-stones, etc. Very often the offending material would seem to have been bits of hardened inspissated fæces. It should be borne in mind that tubercular and typhoid ulceration may result in perforating lesions in this locality.

The symptomatology of peri-cæcal inflammation is reasonably distinct. In typhlitis stercoralis there is usually a history of more or less constipation, not infrequently alternating with a watery diarrhœa; pain which may be general at first, afterwards becoming localized to the right iliac fossa, meteorism, anorexia, sometimes vomiting, and a slight rise of temperature. On examination, a characteristic doughy, elongated tumour can be felt in the region of the cæcum. The inflammation rarely attains a high degree or goes on to suppuration. The pain is severe, but never intense as in the forms of the disease to be presently described. The course of typhlitis stercoralis is from a few days to a week or two, depending upon the severity of the inflammation and the possibility of bringing about a free evacuation. While not at all probable, as has been said, that these cases should go on to suppuration, such results have occurred.

The other variety, or perityphlitis, depending for the most part, as we have seen, on inflammation of the appendix, presents much graver symptoms. Not unfrequently the patient will complain for some days or even weeks of obscure symptoms relating to the intestinal tract. There is anorexia, vomiting, indistinct colicky pains, constipation or diarrhœa. As the disease progresses these symptoms all become greatly aggravated. Fever comes on,

usually quite irregularly; very high temperature is uncommon. Vomiting is often prominent and uncontrollable. There is less meteorism than in simple typhlitis stercoralis. The pain, at first somewhat general, becomes localized in the right iliac region and is of agonizing severity. The patient lies on his back with the right leg flexed on the abdomen. The pain often extends to the testicles. Gurgling may be detected over the region of the cæcum. In a few days a tumefaction is noticed over the cæcum, varying much in size, and exquisitely sensitive to touch. Percussion over it is dull, and it feels brawny and œdematous. Constitutional symptoms are now well marked. The patient has an anxious expression; the tongue, which is at first red, now becomes coated, and often a marked typhoid state sets in. It is not usual to detect fluctuation in the tumour before the second week. When perforation occurs we have a general peritonitis set up, with the symptoms which will be described under appendicitis. Of the duration of perityphlitis it is impossible to speak definitely, as it depends upon a variety of circumstances. Of course, when a circumscribed abscess is formed, the duration depends upon the time and mode of its evacuation. Then, too, the element of rupture of the abscess into the peritoneal cavity—not a very uncommon accident—must be borne in mind. Pepper has spoken of the frequency with which these cases assume a chronic form, running over months, until the patient is relieved by operation or spontaneous rupture of the abscess, or dies from general peritonitis.

The third division, or appendicitis, I would limit to those cases recognized clinically by perforation and general peritonitis. When the appendix has become adherent to neighbouring parts, or when there has been a circumscribing peritonitis, or where abscess in the cæcal region has occurred, there is, I think, always more or less involvement of the cæcum, and I would put these cases under the second category.

Inflammation of the vermiform appendix, falling short of ulceration and perforation and not extending to the cæcum, cannot be recognised by any symptoms with which we are as yet familiar. As we know the disease in its strict limitation it differs in no way from perforation of the intestine due to other causes. There is intense pain, collapse which may prove quickly fatal, general peritonitis, and in the vast majority of cases death. It is to be hoped that, as attention has been so frequently called to this affection during the past few years, some more certain diagnostic signs may be pointed out.

The prognosis of simple typhlitis stercoralis is very favorable, nearly all cases recovering rapidly after the impaction has been relieved. So far the result in those cases in which the inflammatory process has been confined to the appendix and perforation into the peritoneal cavity has occurred, has been almost uniformly

fatal. A few cases have been reported where a timely laparotomy saved the life of the patient. It is hard to estimate the mortality of perityphlitis, since so much depends on the treatment.

In typhlitis stercoralis the indications are to remove the offending material as soon as possible, which is best done by small repeated doses of sulphate of magnesia. Often it will be found that there is too much inflammation present to attempt this at once, and then it is best to give opium freely for a day or two, sometimes longer, until the pain is allayed, and then proceed with the purgative. In all cases opium is invaluable, and should be used freely to relieve the pain which is such a prominent symptom. In perityphlitis almost all surgeons agree that early operation is advisable, and some, it seems to me, go to an unwarrantable extreme in this regard. Of course, when perforation into the peritoneal cavity has occurred, immediate operation is demanded; but while the diagnosis is uncertain it scarcely seems justifiable to resort to the knife. Of course, when pus is detected, or when a decided tumor with marked constitutional symptoms is present, then operation is called for. The danger attending the use of the aspirator needle has, it appears to me, been overrated, and I am inclined to think that it is a very valuable means with which to confirm the diagnosis.—*Transactions Med.-Chirurgical Faculty of Maryland, April* 1888, *p.* 103.

DISEASES OF THE URINARY ORGANS.

32.—ON INTERMITTENT ALBUMINURIA.

By C. H. Ralfe, M.D.Cantab., F.R.C.P., Physician to the London Hospital.

[The following extract is taken from an interesting paper on the Classification of the Various Forms of Functional Albuminuria. The mechanism of functional albuminuria is first discussed in some detail, and then its better known forms, the "cyclical" and paroxysmal, are described. We reproduce here only an extract from Dr. Ralfe's remarks on the Intermittent Form of Functional Albuminuria.]

Intermittent albuminuria is a term that should be used when we wish to speak of an albuminuria that is neither cyclical nor paroxysmal. It comprises a considerable number of cases that differ considerably from each other, both as regards the character of the intermittences and with respect to the causes that apparently induce them. It may be as well, then, provisionally to further subdivide this group according as the cases seem to depend upon (*a*) digestive, (*b*) neurotic, and (*c*) toxic agencies for the production of the albuminuria. (*a*) In this form the albumen is found in the urine shortly after the ingestion of food; in some cases it has been

induced purposely by partaking largely of raw eggs; in this case probably the foreign albumen thus taken in excess is partially eliminated by the renal epithelium. Cheese is said sometimes to cause albuminuria, but the instances do not seem to be well authenticated. The peculiar albumen (*alkali*) of milk I have recognised in the urine of patients taking it in large quantities, but in these cases the urine was previously albuminous. Apart from these instances, the albuminuria of digestion is probably due to too active metabolism in the liver, and an albumen unfit for assimilation passes too hurriedly into the circulation and is thrown out by the kidneys. This form of albuminuria is most commonly met with at the extremes of life—in children and elderly people. Among the latter I have often found it associated with gout. (*b*) Albuminuria the result of disturbed innervation is frequently met with. A shock or fright may cause the urine to become albuminous for hours after. More commonly the albuminuria arises from reflex disturbances. Irritation of a nerve plexus on the peritoneum has experimentally been found to cause albuminuria. Dr. Matthews Duncan has stated that in parametritis a temporary albuminuria is not infrequent. Many cases probably of the intermittent albuminuria of young persons are due to reflex causes, especially of the generative organs, since it is at the age of puberty that the albuminuria of adolescents is generally first observed. Albuminuria in a child with an elongated prepuce was cured by circumcision. But the most direct influence of thenervous system in the production of albuminuria is shown by the evil effects of over-study combined with anxiety, which is fostered by the present competitive system. Hardly a session passes but I am consulted by some student who has discovered albumen in his urine whilst reading for his examination, and of whom I hear no further when his troubles are over. (*c*) The albuminuria caused by toxic agents has not been sufficiently studied to speak of it with much positiveness. A dock labourer, who had become "dead drunk," was found to have the urine in his bladder albuminous; this rapidly passed off. Dr. McGregor Robertson has induced albuminuria experimentally by injecting atropine. Constipation of the bowels may be considered one of the causes of this form of intermittent albuminuria. Dr. Mahomed, however, considered that constipation induced albuminuria by raising the pressure in the renal vessels; but I am inclined to the view that it is caused by the toxic action of the reabsorbed fæcal products, the urines of such patients often containing an excess of indican and oxalate of lime. At all events, it is an albuminuria usually easily remedied. A medical man in the West of England, who consulted me with reference to the presence of albumen in his urine some three or four years since, writes to me to say he is "in excellent health, hunts twice a week, and never sees albumen unless he has forgot

to take his Friedrichshall water for some days." Albuminuria the result of muscular exercise is a subject of dispute, some writers insisting upon its frequency, others maintaining that it is comparatively rare. Thus, one author puts it at 16 per cent., another at as low as 3 per cent. I incline to the lower quotation, as I believe that the effects of muscular exercise in the production of albuminuria have been much exaggerated. Intermittent albuminuria differs (as already stated) in not exhibiting a cyclical or paroxysmal tendency, but occurs sometimes continuously for days, and then intermits, whilst in other cases the intermission is diurnal. The absence of any periodicity or paroxysmal tendency thus distinguishes cyclical and paroxysmal albuminuria from simple intermittent albuminuria; but it is more important to distinguish the latter from the intermittent discharge of albumen, which is frequently observed in chronic interstitial nephritis at that period of the disease when it is passing from the pre-albuminuric stage into that in which the albumen becomes persistent in the urine. Our difficulties are, moreover, increased in this case by the fact that, as the renal epithelium and tubules are but yet little affected at this period of the disease, we do not find casts or desquamated epithelium to help us to form a diagnosis. The only clue afforded likely to be of assistance is to be found in the polyuria and high tension of the pulse, and even these are sometimes not sufficiently well marked to give confidence to an immediate opinion. I need hardly say it is of the utmost consequence for the medical attendant to be aware of this difficulty, and to withhold a too early expression of opinion. He should constantly examine the urine at different periods of the day, and under varying conditions, with regard to food, exercise, regulation of the bowels, and especially compare the amount of urine passed with the quantity of fluid ingested. This latter is a very important point, for I have found that *the polyuria of chronic instertitial nephritis does not depend proportionately on variations in the amount of fluid ingested, but on the degree of arterial tension; whilst in functional albuminuria the correspondence between the fluid ingested and that passed out of the body follows the ordinary physiological law.* The scope of the present paper, however, does not admit of my dealing with the very important subject of the diagnosis between the various forms of functional and organic albuminuria, and I can only insist here upon the utmost care being taken before an opinion is definitely arrived at, more especially as the form of organic albuminuria, which is most likely to be regarded as functional, is that in which the disease has not yet gravely involved the epithelial structure, and in which appropriate treatment can be most advantageously employed. A mistaken view of the case at this period is therefore most disastrous, as time is lost whilst the renal degeneration is advancing.—*Lancet, Nov.* 24, 1888, *p.* 1009.

33.—ON THE SYSTEMATIC EXAMINATION OF THE URINE FOR ALBUMINS IN THE URINE.

By D. Noel Paton, M.D., F.R.C.P.E., Lecturer on Physiology Edinburgh School of Medicine, Surgeons' Hall.

Although the importance of the presence of proteid matters, or, as they are generally called, albumins in the urine, has for long been recognised as a valuable clinical sign, it is only now that we are beginning to appreciate the possible importance in diagnosis of a detailed examination into their nature. Hitherto the difficult and tedious methods employed in such investigations have deterred medical men from undertaking the extensive series of investigations upon which alone any practical conclusions can be based. The researches of Senator (*Virchow's Arch.*), published in 1874, and the more recent observations of Maguire (*Lancet*, 1886) in regard to the relative proportions of the two most important of these proteids —serum albumin and serum globulin—indicate very clearly the probable value of such careful examination in the differentiation of the various forms of albuminuria.

Being strongly impressed by the importance of these methods of investigation, I have been in the habit of teaching students a systematic and simple procedure by which a qualitative examination of the urine for these bodies may be rapidly carried out; and, at the same time, of demonstrating to them an easy method for the quantitative determination of the two most important of these bodies.

As is well known, the proteids which most commonly occur in the urine are serum albumin and serum globulin—the two great proteids of the blood serum. In addition to these, peptones and albumoses—(a series of bodies formed as intermediate stages in gastric digestion between the proteids of the food and peptones)—also sometimes occur. It is needless here to refer to the rarer proteid bodies which have from time to time been described as appearing in the urine.

To differentiate these various proteids, the method of procedure is as follows:—The urine is in the usual way slightly acidulated with acetic acid and boiled; if a precipitate forms, the presence of serum albumin and serum globulin, or of one of these, is indicated. The fluid with the precipitate is now thrown on a small filter-paper and allowed to filter into another test-tube. The filtrate is then examined for albumoses and peptones. If no precipitate is got on boiling the original urine, it is immediately examined for these bodies without previous filtration. The filtrate or the clear urine is treated in the ordinary manner with cold nitric acid (Heller's test), when, if an albumose is present, a white ring appears at the junction of the urine with the acid. Or their presence may be demonstrated by treating with acetic acid and ferrocyanide of potassium, with which they give a white precipitate. It is well

known that the chief albumose is precipitated at a temperature of 60°-65° C., but is re-dissolved on heating to a higher temperature; and this fact occasionally causes some little confusion to the physician unacquainted with the reactions of this body. For the differentiation of the various albumoses which may appear in the urine, the reader is referred to a paper by Dr. Martin (*Brit. Med. Jour.*, 21st April, 1888). Their clinical significance is yet little understood, though undoubtedly they occur in other cases than in those affected with osteo-malacia, in connexion with which disease their presence was first described by Bence Jones.

If no albumose is present in the urine, an examination is made for peptones. If albumose is present, it must be separated as follows:—To some of the original urine in a test-tube powdered sulphate of ammonia is added till a saturated solution is produced, when all proteids but peptones are precipitated and may be separated by filtration, and the filtrate tested for peptones. This may be readily done by means of Dr. Johnson's picric acid test. Johnson's picric acid paper may be used, or the well-known Esbach's solution of picric and citric acid may be employed. If peptones are present a clouding is produced, which disappears on boiling, but returns on cooling. I find this a more satisfactory test than the method of pouring a layer of Fehling's solution under the urine and watching for the biuret reaction.

But we have still to distinguish between serum albumin and serum globulin, both of which are precipitated on boiling the original acidulated urine. In most cases the precipitate is a mixture of both of these proteids, as was first indicated by Lehmann (Virchow's *Arch.*), and afterwards by Senator (*loc. cit.*), and by Edlefsen (*Deutsch. Arch.*, 1870).

The presence of globulin may be demonstrated by rendering the urine faintly alkaline with a drop or so of liq. potassæ, and then pouring down the side of the test-tube a saturated solution of sulphate of magnesium, when a white ring appears at the junction of the two fluids. The urine must not be acid, otherwise serum albumin as well as serum globulin is precipitated. By saturating the alkalized urine with sulphate of magnesium, all the globulin may be precipitated, as was shown by Hammersten (Pflüger's *Archiv.*); and if we filter and acidify the filtrate, we get either without or with boiling a precipitate of serum albumin when this is present. By comparing the density of the precipitate got on boiling the original urine with that got on boiling this filtrate, we may form a rough judgment in regard to the amount of globulin which has been removed by the sulphate of magnesium, and in this way upon the relative amounts of the two proteids. But the method is so rough as to be worthless.

I have already referred to Senator's series of observations on the relative amounts of serum albumin and serum globulin—para-

globulin as he calls it—in the urine in different forms of Bright's disease. His method of observation was by no means satisfactory, depending as it did upon the separation of the serum globulin by diluting the urine, and passing through it a stream of carbonic acid. But from these observations he was able to conclude that "In every urine which contains coagulable albumin, (para) globulin may be detected as well as serum albumin, and the amount of this is not dependent only upon the total amount of albumin, but may differ according to the different states of the diseased kidney. So far as the few observations allow a conclusion to be drawn, it appears that the amyloid degeneration may be distinguished from chronic renal disease by the richness of the urine in para-globulin."

Maguire, using a more satisfactory method for the separation of the para-globulin, namely, by means of sulphate of magnesium, and determining the amount of each proteid by the dilution method—a not altogether satisfactory process—concludes from a few observations that in functional albuminuria the globulin is in excess of the serum albumin, while in granular kidney the reverse is the case. In one case of albuminuria of pregnancy para-globulin was the only proteid present.

Certain physiological observations would further lead us to believe that a variation in the relative amounts of albumin and globulin in the urine might occur as the result of physiological variations in the condition of the animal. Burckhardt has shown that in the condition of starvation the globulin of the blood serum greatly increases in amount.—[We omit Dr. Noel Paton's method for the quantitative estimation of serum albumin and globulin, published in the same paper.]—*Edinburgh Medical Journal, Dec.* 1888, *p.* 522.

34.—ON THE RELATIVE VALUE OF OPIUM, MORPHINE, AND CODEINE IN DIABETES.

By Thomas R. Fraser, M.D., F.R.S., Prof. of Materia Medica, and of Clinical Medicine, in the University of Edinburgh.

Since Pavy's recommendation of codeine as a remedy having advantages over opium and morphine in the treatment of diabetes mellitus, codeine has been much used, and has even to a large extent displaced opium and morphine in the treatment of this disease.

There are at the same time no clear pharmacological data in support of this preference. Indeed, the data are not even such as to suggest it; for notwithstanding assertions of a like superiority in the relief of various symptoms of other diseases, the facts, so far as we know them, seem to show that, pharmacologically, codeine is in its most important actions merely a weak morphine. This conclusion is supported by the circumstance that in its chemical structure it differs from morphine only in containing

methyl—that in fact it is morphine diluted by the addition to it of the relatively inactive substance, methyl. In regard to its therapeutic effects in those conditions, other than diabetes, in which it is now commonly used, I have also failed to obtain any evidence that it acts otherwise than a weak morphine; for example, in the relief of cough, the production of sleep, or the removal of pain whether in the abdomen or elsewhere.

These considerations, as well as the special suitableness of the disease for such comparison, and the probable value to therapeutics of any decisive results that might be obtained, induced me, several years ago, to make some observations for the purpose of comparing the effects of codeine with those of opium and morphine upon the more important of the phenomena of diabetes mellitus. Observations of a detailed character have been made on four patients, with results of a concordant kind; but I propose to describe, by way of illustration, the results that are of most importance in one of these patients only, on whom, incidentally, some observations were also made with atropine.

This patient, M. B., aged 26, came under my care in the Royal Infirmary of Edinburgh, on October 5th, 1887, suffering from thirst and frequent micturition. None of her immediate relations had suffered in a like manner. She was a nursery maid, and had lived in comfortable houses, and been supplied with abundant and good food. The first symptom of her illness was thirst, which showed itself about seventeen months prior to her admission, and had led to the discovery that she was suffering from diabetes mellitus. She was treated for this illness, but without much effect, and she soon became very weak, and lost flesh, so that in twelve months her weight was only eight stone, whereas immediately before this illness it had been ten stone. Notwithstanding careful and strict dieting, the emaciation advanced, and she weighed only seven stone four pounds when she entered the Royal Infirmary. She was then dyspeptic, and moderately anæmic, but she did not suffer from constipation, nor was the liver enlarged. There was no disease of the respiratory or circulatory systems. The eyes were hypermetropic, the skin dry, and the temperature slightly subnormal.

The patient was in the hospital from October 6th, 1887, to July 10th, 1888, and the observations to which I shall now draw attention occupied the whole of this time. The general plan followed was to allow the patient ordinary diet for one period; then to adopt a carefully restricted diet; then this diet with codeine, in doses varying from half a grain to five grains thrice daily, and for a short time with one-sixtieth and one-thirtieth of a grain of sulphate of atropine thrice daily; then restricted diet alone; then restricted diet, first with opium alone, in doses of half a grain to one grain and a half, and afterwards with opium and sulphate of atropine;

and, finally, restricted diet with hydrochlorate of morphine. The administration of morphine was not preceded by an interval in which restricted diet alone, and without any medicinal treatment, was adopted; as in the period immediately preceding that of the administration of morphine, in which no medicine was given, the patient had become dull, languid, and sleepless, she had complained of sickness and loss of appetite, and in a few days had been unable to leave her bed.

To state the results in another way:

1. The case was one in which mere restriction of diet did not have so marked an effect as occurs in many cases. The prospects of successful treatment were not, therefore, very hopeful.

2. Codeine had a very decided effect in reducing the quantity of urine, sugar, and urea. When contrasted with the reduction produced by restricted dietary alone, the addition of nine grains of codeine in the day lessened by about one-third, and of fifteen grains of codeine in the day by about one-half, the quantity of fluids drunk, and the quantity of urine, sugar, and urea, and it slightly reduced the specific gravity of the urine.

3. The addition to fifteen grains of codeine of the one-twentieth, and afterwards of the one-tenth, of a grain of sulphate of atropine, caused a still further, though not a large, reduction.

4. After the administration of codeine had been stopped, an interval of six days on restricted diet, without any medicinal treatment, was not sufficient for a deterioration to occur to the conditions present before codeine had been given.

5. The subsequent administration of half a grain of opium thrice daily produced a considerable reduction. With one grain of opium thrice daily the reduction was to less than one-half, when contrasted with the amounts during a restricted diet alone, and before any medicinal treatment had been adopted. One grain and a half thrice daily produced a further reduction; and when to it was added one-twentieth of a grain daily of sulphate of atropine, a still further reduction occurred.

6. Restricted diet, with one-third of a grain of hydrochlorate of morphine thrice daily, or one grain daily, also produced a marked reduction; and the conditions relative to the points under investigation were even more satisfactory than when fifteen grains daily of codeine were being administered. While this small quantity of morphine was being taken, the fluids drunk by the patient were only one-third, the urine and sugar less than one-half, and the urea about one-half of the amounts during the period of restricted diet alone, before medicinal treatment had been commenced.

As to the general state of the patient during each of these conditions of treatment, restriction to an antidiabetic dietary produced improvement in thirst and mental activity. So long as the quantity of codeine was limited to six grains daily, this improve-

ment was maintained; but when nine grains, and even more, when fifteen grains were being taken daily the appetite failed, she became listless and apathetic, vertigo was occasionally experienced, and the patient remained for a considerable part of each day asleep in bed. The addition of atropine to the codeine did not produce any improvement, but rather added to the discomfort by impairing vision; and even when only one-sixtieth of a grain was being taken thrice daily, the pupils became slightly dilated. When codeine and atropine were stopped, and a restricted dietary alone adopted, the health was not improved. The symptoms referred to became, indeed, worse, and prevented a prolongation of the period of restricted diet without medicine to the extent that seemed desirable before a new plan of treatment was adopted. When opium was now given a marked improvement occurred, but the larger doses caused some drowsiness during the day. With one grain daily of hydrochlorate of morphine the condition of the patient became more satisfactory. The drowsiness soon disappeared, the appetite improved, and she became sufficiently active to engage in ward work. Constipation of the bowels was not produced by any of the medicinal agents employed.

A consideration of these averages seems to show that, under a daily administration of one grain of hydrochlorate of morphine, the quantity of fluids drunk, and of urine, urea, and sugar voided, was rather less than when three grains of opium, and decidedly less than when fifteen grains of codeine were being taken. In three other cases in which I have instituted a comparison between these substances in diabetes mellitus, morphine also showed a marked, though not so great, superiority over codeine. After this note had been prepared, I have seen a recent paper by Dr. Bruce, of London, in which similar results were obtained in two very carefully observed cases. So far as I know, also, the favour with which codeine is regarded in this disease has not been supported by any observations calculated to show its value relatively to opium or morphine so clearly as in the cases to which I have referred.

The evidence, therefore, seems to indicate that codeine is a less powerful remedy in diabetes than either opium or morphine, and to confirm the view that in its therapeutic value it ranks as a weak or diluted morphine. The conclusion receives an importance (no doubt a subsidiary one) from the circumstance that codeine is about three times as expensive a substance as morphine. The great demand for it has led to its being manufactured from morphine so largely, that probably one-fourth of the codeine in the market is an artificial substance. When we consider the large doses that are required in diabetes mellitus, and the generally protracted duration of this disease, we are, I think, justified in asking for more clear evidence of its superiority over morphine than has as yet been produced.—*British Med. Jour., Jan.* 19, *p.* 118.

35.—CHRONIC BRIGHT'S DISEASE.—DIETETIC TREATMENT.

By Beverley Robinson, M.D., New York.

Food.—The best diet in chronic parenchymatous nephritis is generally recognised to be an exclusive milk diet. The reasons given for this preference and which appear to me important, may be enumerated as follows: (1) Milk is easily assimilated, and is therefore well adapted to a disease in which digestive disturbances are almost the invariable rule. These disturbances are, generally, as we know, of the nature of dyspepsia, nausea, vomiting, epigastric pains, etc. (2) If a suitable amount of milk be taken daily, it provides sufficient nutriment for the needs and proper support of the economy. (3) An exclusive milk diet forms less urea in the blood than any other form of alimentation. (4) Milk furnishes a large quantity of fluid to flush out the kidneys with, always supposing it is taken at short intervals and in fairly large quantities each time. In this way it increases urinary excretion by continued excessive pressure in the arterial system, and thus helps the dropsy to disappear.

The objections which are, or may be urged against an exclusive milk diet are: First, it is not tolerated by all patients. Some persons soon tire of it, or get a profound, unconquerable disgust for it. There are a few individuals, also, in whom, I am convinced, an idiosyncrasy has much to do with this distaste, and try as we may to get them to take milk in any useful quantity, we are finally obliged to abandon the effort in sheer despair of success. In either of these contingencies, we are obliged to recur to broths (chicken and veal), beef-tea, farinaceous food, and other diluents than milk.

Drinks.—Of these the best is unquestionably pure water, preferably distilled, according to Dickinson, and of this about two or three pints daily may be advisable. Soda-water, or cream of tartar lemonade may also be permitted, if either stomachal intolerance or constipation be unpleasant symptoms in the case.

Personally, I doubt the utility of distilled water, as I believe its lack of aeration is a drawback to its potability and digestibility. Mere shaking it in contact with atmospheric air will not supply what is needed, and I object somewhat to artificially aerated waters made under pressure, as, I believe, they are apt, when taken in large quantities continuously, to distend the stomach and bowels with carbonic acid gas, and increase after a time the discomfort of the patient. I would recommend, after several satisfactory trials and on account of its great purity, limpidity, and perfect ease of digestion, pure spring water as being a very desirable beverage. The first great thing to accomplish is, at all events, to have these patients drink much pure water, up to several pints a day, and yet not upset an already weak digestion in doing it. The use of water abundantly as a diuretic in renal disease does not antagonize the principle of giving the kidney little or moderate work to do, as it is a physiological diluent, and does not occasion

any irritation of the kidneys. Some other diuretics, among which we may at times place digitalis, are prone to induce this untoward effect, either directly or by increasing heart-action, and contracting the small renal arteries. This is not true, however, of mild alkaline water, soda-water or cream of tartar solution with lemon in it (Imperial drink). By these different means a marked flow of urine is obtained and the kidneys are kept continuously flushed, so that the masses of degenerated epithelium which tend to clog the tubes are gotten rid of. In this manner any remaining congestion of the gland will be relieved by secretion, and the system will be cleared of impurities which previously had been retained. By the passage of a large quantity of fluid through the kidneys we also reduce to a minimum (dilute?) that nitrogenous excess which finds its way out through these organs, and gives rise to many sources of irritation. If at the same time we cut off the materials of urea and uric acid, we are doing the best we can.

Tolerance of milk, however, when pure milk is objected to, may often be obtained, if we mix it in certain variable proportions with lime-water, carbonic water, Vichy, etc., or give it in the form of peptonized milk or koumyss. Whenever milk is well supported by the stomach it may be taken either skimmed or unskimmed, that is to say, with or without the cream. Unskimmed milk is advantageous, says George Johnson, because it prevents constipation. It is desirable, according to Tyson, because its nitrogenous principle, the casein, is present in a proportionately small amount as compared with skimmed milk. On the other hand, the stomach is often intolerant to rich milk, and the fatty elements in the cream are apt to occasion numerous dyspeptic symptoms, such as headache, heartburn, diarrhœa, etc. Under these circumstances the milk had better be skimmed rather than abandon it as the main article of diet. Even though we are obliged to do this, or to adopt many different methods to make milk tolerable to irritable stomachs, we should try all means which offer any chances of success before abandoning it altogether. Sufferers from chronic Bright's disease are so frequently affected with gastric symptoms which may prove both obstinate and distressing, that it will scarcely do to give up milk diet without a prolonged struggle to avoid it if possible. The probabilities are that many dyspeptic symptoms are occasioned by vicarious elimination, through the mucous membrane of the stomach, of impurities which normally are excreted by the kidneys. This is proven by the fact that the gastric secretions are at times mingled with the products of decomposed urea. Of course, when this is the case, relief should be sought, partly at least, in suitable diet, and iced milk in small quantity can occasionally alone be taken. If this fail us, nutritive enemata must be resorted to in order to sustain the patient until incessant vomiting be stopped. When taken, milk may be either

warm or cold, as best suits the patient. It is usually found that, if great irritability of the stomach be present, it is more acceptable cold, in small quantities and at short intervals. If it form the exclusive diet, it must be taken in fixed quantities and at specified hours. From a few ounces to half a pint, or one pint, may be taken every two or three hours by an adult. From two and a half to four quarts in the twenty-four hours are sufficient to prevent bodily loss and to keep its condition about stationary.

In children affected with chronic Bright's disease milk diet acts extremely well, and while they are upon it there is no need for them to have any other food or drink. Of course they will take less milk than adults in proportion to their ages. Clinically there is evidence to show that exclusive milk diet (or nearly so) reduces notably the quantity of albumen excreted by the kidneys.

After a time an exclusive fluid diet may do harm to the patient by occasioning a superabundant secretion of urine, and in this way, also, too great elimination of albumen from the system. In patients also whose stomachs have already become very sensitive, great dilution of the gastric juice will give rise to dyspeptic symptoms.

When, in addition to these, or, indeed, independently of them, symptoms of general anæmia, exhaustion, etc., become manifest, and especially if the quantity of albumen in the urine be small, the exclusive milk-diet should be supplemented by a due proportion of farinaceous or vegetable food. Finally, even this diet may become objectionable, as it obliges the stomach and intestines to perform more work than they can properly accomplish, and whenever this condition is tolerably evident a moderate amount of broiled or roast meat should be allowed daily. The time at which meat is taken is not an indifferent matter, and, in my judgment, it should form part of an early dinner, which may include a slice of bread with a little butter. The rule here laid down is a good one to be followed, even by gouty patients, and despite the fact that meat is recognised by nearly all observers, in its quality of a most highly azotized substance, as increasing the quantity of urea and analogous compounds in the blood, which the kidneys in their disabled condition are unable entirely to excrete. While meat, therefore, under the circumstances mentioned, may be allowed in moderate quantities, more than this would unquestionably aggravate the situation. Although this is true, we should not have the same reason to fear uræmic symptoms in this form of kidney disease as in interstitial nephritis or so-called gouty kidney. According to Dr. Fagge, the generally received opinion in regard to this matter is erroneous. He writes as follows: "The statement commonly made, that this form of kidney disease (cirrhosis of the kidney) is the one above all others in which uræmia is apt to occur, appears to be traceable to the fact that the advanced stages of parenchymatous nephritis have been so generally mixed up with it."

In those cases in which the disease is progressing satisfactorily dropsy disappears, while albumen is still present in the urine. It is important for the patient at this period to avoid any errors of diet until the urine has regained its normal character.

Stimulants.—As a rule, all stimulants are injurious in the dietetic treatment of chronic parenchymatous nephritis. In any form alcohol increases the work of the kidneys, augments the quantity of urea in the blood, and promotes increased excretion of albumen. Claret and the light French and German wines are perhaps the least objectionable. Gin, or whiskey much diluted, are occasionally of value as diuretics. It may be stated as a cardinal law that the non-inebriant drinks alone are those which have no harmful effects, or are, as a rule, of any special utility. Even a small quantity of certain wines, like Moselle, Madeira, or Champagne, will increase immediately and considerably the quantity of albumen excreted. According to Sparks and Bruce, the most injurious of all stimulants in this respect is Madeira. In regard to the question of using alcohol, it should be continually borne in mind that its consumption, by the extra work it imposes on the kidneys, is opposed to the principle of lessening as much as possible the labour of the altered gland-tissue. It should also be remembered, particularly among the lower classes, that excess in taking alcohol has been believed by many distinguished observers to be one of the most frequent causes of albuminuria. If this view be only at times correct, it may be inferred in certain cases that a moderate employment of alcohol may tend to "perpetuate and aggravate" the disease when it is obviously due to other causes. It is further proven by clinical experience that alcoholic stimulants produce greater and more pernicious effects when there are considerable renal changes than would result from an equal quantity given when the kidneys are in a normal condition. Despite all these objections, conditions may arise when alcoholic stimulants are imperatively called for. Such instances are those which occur whenever great exhaustion is present, as by reason of blood-losses from albuminuria; and in instances in which there is profound anæmia, particularly of the brain. This condition is often, as we know, the accompaniment of threatened uræmic symptoms, viz., convulsions, dyspnœa, etc., when the economy is literally poisoned by retained urinary excreta. Under these circumstances alcoholic stimulants are needed, and may be given as freely as the occasion seems to require. In some instances, no doubt, the uræmic attack may be aborted, owing to the fact that more blood is sent to the brain, which is deprived of it, and the heart, which is beating rapidly and feebly, is strengthened and great temporary relief is thus afforded. In these cases we should scarcely look for much help from malt liquors or wines, but must place our reliance upon brandy or whiskey.—*N. Y. Medical Record, Jan.* 5, 1889, *p.* 1.

EXETER
QUEEN ST.
DISPENSARY

Surgery.

AMPUTATIONS, FRACTURES, DISLOCATIONS, AND DISEASES OF THE BONES, JOINTS, ETC.

36.—ON AN INEXPENSIVE AND EFFICIENT SUPPORT FOR THE HEAD IN CARIES OF THE CERVICAL SPINE.

By Richard Barwell, F.R.C.S., Consulting Surgeon to the Charing-Cross Hospital, London.

It must have frequently happened to other consulting surgeons, as it has to me, that a child is brought to them suffering from caries of the cervical vertebræ, whether of atlas and axis or of lower bones. Often the parents of such patients cannot afford the usual *minerve* or jury-mast; or in pretty severe cases it may be advisable to prevent rotation, which those mechanisms cannot effect. Occasionally, too, the condition of the neck is such as to render it necessary, or at least highly desirable, to adapt a support that can be very quickly—indeed, immediately—applied. So it occurred in my practice about twelve years ago that a child was sent to me by Dr. Tucker. It is only right that I should say the parents did not bring the child for several days, because that gentleman would not have allowed a patient in such condition to go about with the head unsupported. The girl was not only suffering from pain, but also from that undefined dread which caused her to hold her head with her hands, to fear and avoid any approach, and to wear a peculiarly anxious, watchful expression when anyone moved quickly in her immediate neighbourhood. I was strongly impressed with the danger of letting this child leave my house lest she might fall dead in the street, unless the head were supported. I therefore adopted the following mode of splinting the neck. It is one which I have often used since, and have found very advantageous, even in less acute disease, and for continuous use.

A pattern must first be cut in brown paper, or some such material, thus:—Let us suppose the child to be about seven years old. A piece of paper, say eighteen inches by twelve, is laid, with the long axis transverse, on the neck and upper part of the chest, in such wise that when it is pressed in against the throat and under the jaw its upper anterior edge projects rather more than an inch beyond the chin. With scissors the paper is cut in a concave line from the condyle of the jaw downwards along its ramus, by the side of the throat, well outside the thyroid cartilage, to a point just above the clavicle, and about a third of its length

outside its joint with the sternum. These cuts, being completed on each side, permit the flaps of paper that lie outside them to be folded back over the shoulders and scapulæ in such wise that they meet on the spine between those bones. The rest is mere shaping. The part that protrudes beyond the chin and jaw can be cut away to a level with those parts. The edges of the shoulder-flap, if they press on the root of the neck, must be pared sufficiently to allow room for that part. The lappets, which on each side project beyond the shoulders, can be cut away, leaving a concave edge with the centre of the curve upon the acromion. If there be any overlapping at the spine between the scapulæ, the redundancy can be pared off so that the two edges are parallel, and almost, but not quite, in contact. The pattern assumes the shape seen in Fig. 1.

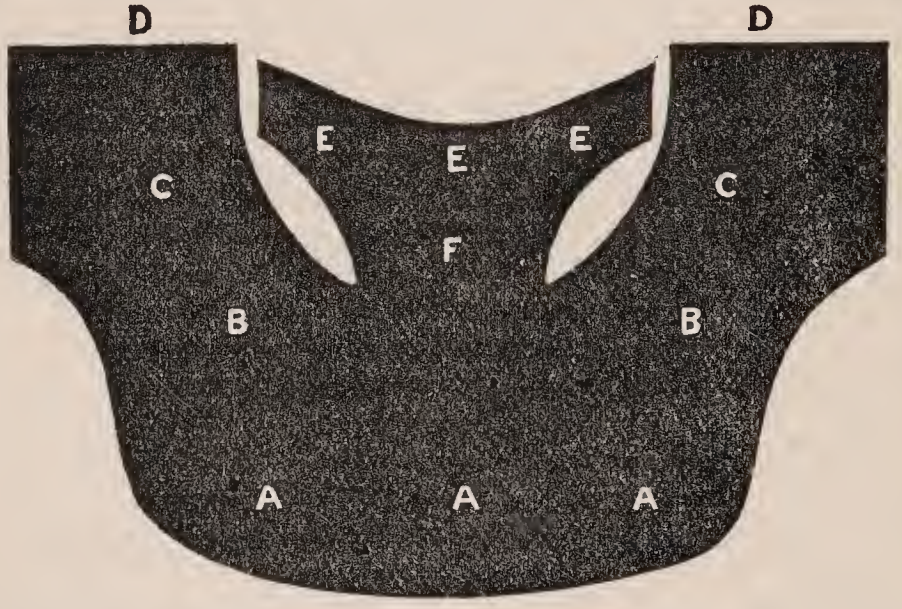


Fig. 1.—Form of brown paper pattern, approximately given. A A A, Part that lies on the chest, the edge being a little above the line of the nipples. B B, Part that lies on the shoulders. C C, Part that lies on the scapulæ. D D, Edges that nearly meet, one on each side of the spine. E E E, Part that lies under the chin, and on the rami of the jaw. F, Part that lies in front of the neck.

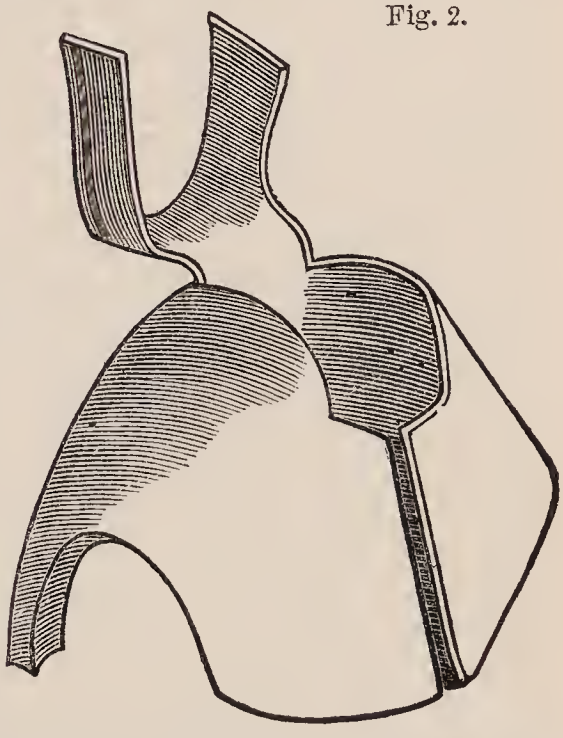
To this pattern is cut a piece of poroplastic felt, which, when softened by heat (steaming is the best), is moulded on the patient, partly by hand pressure, partly with bandage. When thus far complete the splint is of the form given in Fig. 2.

The child can wear it at once outside the shirt or chemise, and with no other precaution than placing a piece of wadding between it and the face. It will be quite a sufficient support to obviate the dangers I have mentioned, and, indeed, several of my poorer patients have used it without further addition for several months. Nevertheless, I advise that an instrument maker or bandagist be employed to arrange it thus. The chin plate should be lined with wash-leather, and may advantageously be somewhat padded; to

each upper end of the fork two straps are to be sewn, the one to pass round the nape, the other over the vertex; if this latter strap slip forward, the two can be tied together with a tape running in the line of the sagittal suture. Lastly, the felt should be perforated along the edges, which lie by the line of the spinous process, so that the whole appliance may be laced on.

In rather exceptional cases, the head, instead of falling forwards, has a backward inclination; such may be met by reversing the mode of cutting the pattern—that is to say, by placing the paper on the back, forming an occipital instead of a maxillary plate, and letting the edges meet and be laced over the sternum; or, if it be desirable to support the head in both directions, this can be done with very little more trouble by shaping a portion in form somewhat like a reversed L (⅂) at each corner, from whence in the pattern the jaw-plate is cut out—that is, at the inner angles of the line marked D in Fig. 1.

Fig. 2.



Moulded splint seen from left side and front.

As I have successfully treated many cases of cervical spondylitis with this splint, it seems to me desirable to let so inexpensive and simple a contrivance be more widely known.—*Lancet, Dec.* 15, 1889, *p.* 1169.

37.—ON BACKWARD DISLOCATIONS OF THE FINGERS UPON THE METACARPUS.

By William H. Battle, F.R.C.S., Assistant Surgeon to the Royal Free Hospital, and to the East London Hospital.

The diagnosis of these dislocations is usually easy; if careful examination be made and the hands compared, there ought to be no mistake, the deformity, shortening, and loss of function being so marked in most cases. Agnew states that he has seen instances where this dislocation had not been diagnosed. It is true that the injury which causes the displacement may be followed by considerable swelling before the patient applies for treatment, especially when it is applied directly to the part; this, however, is usually on the dorsum of the hand obscuring the backward projection of the phalanx; the head of the metacarpal bone can be felt projecting boldly in the palm, and there is shortening. Perhaps

I may be excused if I mention here two conditions which have presented themselves for diagnosis resembling forward dislocation at the metacarpo-phalangeal joints, which I have recently seen. These were union of the epiphysis of the second metacarpal in its new position after displacement towards the palm, and union after fracture of the first phalanges of the fourth and fifth fingers at an oblique angle. The fracture was caused by a sharp weight falling across the hand immediately below the articular surface of the phalanges, and the usefulness of the hand was impaired. The phalanges were strongly flexed at their arti cular extremities, whilst the fingers were in extension, so that the flexor tendons could not draw them into the palm.

Assuming that the anterior ligament with its sesamoid bone forms the impediment to reduction, what methods are likely to lead to a satisfactory replacement of the bones? Manipulation can be employed with the best results if the pathology of the dislocation be borne in mind. This must be employed in a certain definite manner, as it is in dislocations of the larger and more important joints, where it has superseded the cumbrous and dangerous pulleys. Simple violent extension has been employed with disastrous results, and jerky irregular movements are liable to produce the worst or complex form, where the displacement is at first of the simple variety. The surgeon should in the first instance endeavour to reduce the dislocation by gentle but firm manipulation, without the administration of an anæsthetic, and that in the manner known as the dorsi-flexion method. An account of this is given as follows: "I tilt the displaced phalanx up until it stands upon its articular end, place both forefingers so as to hold it in that position, and at the same time press against the distal extremity of the metacarpal bone. Under firm pressure, with the thumbs against the base of the dislocated phalanx, I slide it into place, which can generally be accomplished with ease. In complex cases it is advisable to carry the base of the phalanx backwards along the dorsal surface of the metacarpal bone, with traction on the digit, in order to try to get the ligament and its sesamoid bone more fully in front of the anterior margin of the articular surface of the phalanx before flexion. Should this method fail, which it rarely does, consent to operation may be obtained, and the manipulation repeated under chloroform, when, if it again fails, recourse can be had to operative measures without unnecessary delay. Various mechanical means have been recommended to enable the surgeon to apply greater power to the displaced member, but I would advise that faith be placed more in skilled manipulation than in mere strength. Amongst these contrivances are the American forceps, Levis's apparatus, the Indian puzzle, and the clove hitch, applied over a layer of moistened wash-leather. Mr. Holmes recommends that the surgeon should wait and apply cold

to the joint for a time, but I am convinced that in the thumb as in the finger the best method of procedure now will be to endeavour to divide the anterior ligament as it lies on the head of the metacarpal. In both thumb and finger reduction has been effected after division of the lateral structures, which keep the bones in apposition, but probably this has acted in many instances by freeing the anterior ligament from its side attachments, and so rendering the opening through which the head has passed larger. In order to divide the glenoid ligament, say, in the case of a dislocation of the index finger, it is best to take a strong sharp tenotome with a small blade, and make the puncture from the dorsum and to the outer side of the extensor tendon. Enter the point of the tenotome about a quarter of an inch behind the articular surface of the phalanx, the bones being in the same axis; pass it onwards to the head of the metacarpal, and withdraw, pressing it firmly against the bone, for the ligament is dense. This section should be made along the centre of the ligament, to avoid the sesamoid bone. Mr. Hulke, in his article on Dislocation in "Holmes' System," to which I have already referred, says he has found in the dead subject that a division of the fascia which connects together the sesamoid bones, by allowing the tendons to separate from each other quite up to their insertion, naturally facilitates reduction, without resorting to section of the muscle itself. He had not tried it in the living. Should this method fail in aiding reduction, the surgeon had better proceed to open the joint with antiseptic precautions, for a good movable joint may be obtained if the dislocation is of recent origin, and care be taken with the after-treatment to prevent ankylosis. When failure to reduce the dislocation has possibly been met with, or in old dislocations not deemed advisable, the question of excision of the head of the metacarpal bone must be considered, and there is no doubt that this is indicated sometimes, especially in the case of ankylosis of the thumb, where a movable joint is so important. I have seen more than one instance of useful thumb with unreduced dislocation.

Similar methods of procedure should be tried in the dislocation of the thumb on failure of manipulation. But the surgeon, remembering the flexor brevis muscle and the greater mobility of the first metacarpal bone will do well to follow the method of Fabbri, and flex the metacarpal towards the centre of the hand to relax that muscle, and also the ligament. The tendency of the day is to divide the tendon or tendons of the flexor brevis either by subcutaneous section or by Humphry's method (incision of the joint sufficiently large to admit a small blunt hook, with which I should endeavour to pull forward the sesamoid bones). Batchelder said: "Methods failed unless the lateral ligaments were divided by the method suggested by Sir Charles Bell." These sections in all probability divided the free margin of the glenoid ligament (thus freeing the

head) and the flexor brevis pollicis tendon, the good result being wrongfully ascribed to the division of the lateral ligaments, which are so frequently already torn. In all cases after reduction early resort should be had to passive movement of the joint.

In compound dislocations of these joints the metacarpal bone has been forced through a wound in the palm, and the question of removing this projecting head of bone presents itself to the surgeon. With our present efficient antiseptics, however, an attempt should usually be made to save the joint, as a most successful result may sometimes be obtained. An unusual complication, reported by Mr. Symonds to the Clinical Society, was a fracture of the metacarpal bones, a spicule being found detached in each of his cases; this did not in any way interfere with a good result. Occasionally some difficulty is experienced in reducing dislocations of the phalanges; in all probability this is due to the displaced anterior ligament of these joints. I recently saw Mr. Willett of St. Bartholomew's reduce such a dislocation under ether after the failure of attempts made by others some days before the patient, a young man, presented himself at the hospital.

To recapitulate the methods of treatment recommended, these are in the order in which they should be tried: 1. Manipulation by the "dorsi-flexion" method, without violence, and without (or on failure with) anæsthetic. 2. Subcutaneous section of the glenoid ligament from the back of the joint. 3. In the case of the thumb, subcutaneous division of one or both heads of the flexor brevis muscle. 4. Incision into joint under antiseptic precautions, with replacement of ligament or the long flexor tendon. 5. Excision of the head of the metacarpal bone after severe compound fracture or ankylosis of joint (especially of the thumb).—*Lancet, Dec.* 29.

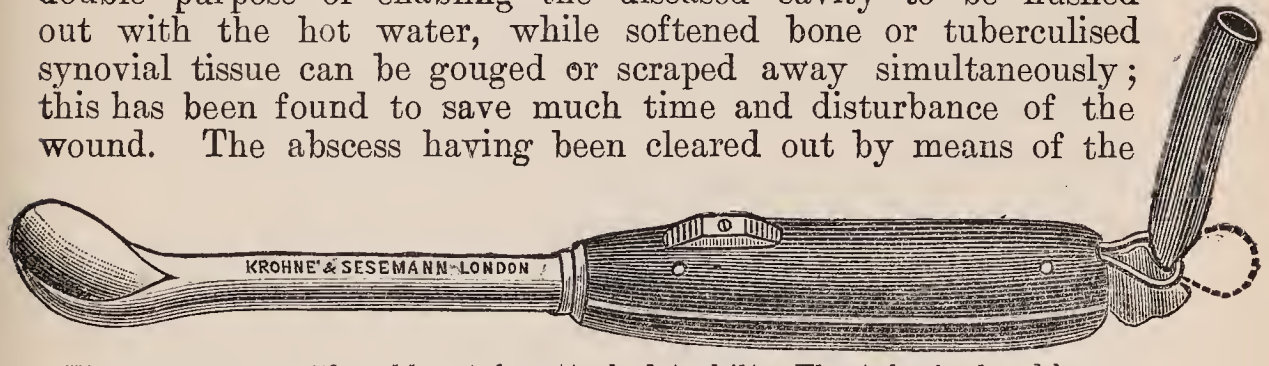
38.—A USEFUL TECHNIQUE IN REMOVING TUBERCULAR DISEASE FROM THE HIP JOINT.

By Arthur E. J. Barker, F.R.C.S., Surgeon to University College Hospital, London.

[Having reiterated his conviction of the Tubercular nature of all Scrofulous Joint Diseases, and emphasised the urgent necessity for the most complete removal of all the parts involved in the diseased process, Mr. Barker describes his method of operating thus:—]

Supposing, now, the case of a child, say, 8 years old, whose hip, in spite of the best treatment we can devise, is steadily becoming disorganised, and in whom a soft swelling is forming round the joint, with fluctuation but without sinuses as yet, the technique I adopt is as follows: The child is, of course, first washed thoroughly with soap and hot water, and taken off the double Thomas's splint, which has probably been in use for months. Then the limb is wrapped in a towel dipped in 1 in 20 carbolic solution,

if possible an hour or two before operation. The incision I have used for several years past is that originally proposed by Hueter, of Greifswald, in 1878, and a little later in this country independently by Mr. R. W. Parker, and which, it is satisfactory to note, is taking the place of all the older incisions. It commences on the front of the thigh, half an inch below the anterior superior spinous process of the ilium, and runs downwards and a little inwards for three inches. As the knife sinks into the limb it passes between the tensor vaginæ femoris and glutei muscles on the outside, and the sartorius and rectus on the inside, until it reaches the neck of the femur. This incision does not divide any muscle fibres, nor either vessels or nerves of the slightest importance. It is unnecessary to carry the deeper part of the incision to the full extent of the external wound. If an abscess is opened up before the joint is reached, its contents are thoroughly flushed out with sterilised hot water, at a temperature of between 105° and 110°, before anything further is done. For this purpose I have had a large three-gallon can made, which has three taps below, to each of which six or eight feet of india-rubber tubing is attached. This can is placed some feet above the operating table, so as to have a considerable pressure of water. Each of the rubber tubes terminates in one of these instruments, which I have designed for the double purpose of enabling the diseased cavity to be flushed out with the hot water, while softened bone or tuberculised synovial tissue can be gouged or scraped away simultaneously; this has been found to save much time and disturbance of the wound. The abscess having been cleared out by means of the



Flushing gouge with rubber tube attached to hilt. The tube is closed by a sliding ring moved by the button in the handle. The cutting edge of the gouge receives the full force of the water stream rushing through the handle.

rush of hot water, aided by these flushing gouges, the neck of the femur is sawn across with a narrow saw in the direction of the external wound. The diseased head can then be lifted out by means of the flushing scoop or a sequestrum forceps, through which the hot stream is rushing into the joint. By the time the head of the bone has been got out the whole cavity is comparatively clean. Now begins the search for further disease. This can usually be easily estimated by the left forefinger with which the acetabulum is first examined, and then all the other parts of the joint cavity. Wherever diseased material is felt it is cut away by the flushing gouge or scoop, while the hot water carries away the *débris* as fast as it is pro-

duced, and with it all blood, while at the same time it arrests bleeding from the fresh cut surfaces. When every part of the field of operation has been gouged and scraped clean of all tubercular material, and the water runs away clear, the cavity is dried out with carbolised sponges, one or two of which are left in it until all the stitches are placed in position. These, which are of hard carbolised silk, should dip deeply, and be placed close together. Just before they are tied, the sponges are removed, and with them the last traces of moisture. The wound is then filled up with iodoform emulsion, and the sutures are tied, as much of the emulsion being squeezed out at the last moment as will come away. A little iodoform is now dusted over the surface of the incision, in which there is no drainage-tube in most cases, and the whole joint is covered with salicylic wool, so adjusted in strips that evenly graduated pressure is brought to bear upon every aspect of the field of operation, while the limb is held well abducted. If the wool be now firmly compressed with a spica bandage, the walls of the whole clean-scraped cavity are brought into contact, and the remainder of the neck of the femur is thrust into the acetabulum, and secured there.

Now where all this has been done, although there remains potentially a cavity, there is actually nothing of the kind, for all the surfaces have been brought into apposition. And then, assuming that perfect asepsis has been observed, all these surfaces ought to unite with a minimum of plastic exudation. After the operation, the patient is at once placed upon his double Thomas's splint as before.

On July 3rd last I excised the hip of a boy, aged 5, which was extensively diseased, and converted into an abscess, in spite of careful treatment on a double Thomas's splint, etc., for a year, and was rapidly becoming worse. The operation was done as above, and the wound was stitched up completely without drainage. There was no shock at all, although the operation was long and severe. The first dressing was left undisturbed for ten days, at the end of which time the wound was found to be soundly healed. The stitches were removed on the thirteenth day, and the boy went home on the following day. He remained on the double Thomas's splint for eight weeks, when it was removed by the parents on his going to Eastbourne, where he began to run about almost at once. Since then he has remained quite well, and is now running about with only a short linear scar in front, and with less than half of an inch shortening of the limb. Not a trace of any mischief can be discovered about the joint, and the latter is slightly movable.

I do not think it was wise to remove the splint so soon as was here the case. It was done without my sanction, but it does not appear to have been followed by any ill result, except a slight ten-

dency to flexion and adduction, and the experience shows how soon firm union of the bones of the joint may take place under favourable circumstances. The slight flexion and adduction can be easily corrected by replacing the splint.

I need hardly insist that if, by any means, we can achieve similar results as the rule in the future in cases of comparatively advanced morbus coxæ, it will be little short of a revolution. We can all remember the usual course of such cases in former days, even when operated on by the most skilful surgeons. The patient usually lay in bed for months with open wounds, suffering a martyrdom at each dressing, which had to be very frequent, and exposed to all the risks of wound infection, hectic, amyloid disease, and general tuberculosis in his very much weakened condition; and even when the wounds ultimately healed, it was frequently only to break out later at one or more points where tubercular foci had not been completely removed, or where the surfaces of the operation wound had been inoculated during the process of removal. So much so was this the case that there was a protracted inquiry, you will remember, a few years ago, by a Committee of the Clinical Society of London, to ascertain whether there was any real and substantial benefit to be obtained by excision of the hip at all; whether the ultimate mortality from the disease was reduced by it, and whether the results as to the usefulness of the limb were improved by the operation. And here I would venture to remind you that the best results in any long series of cases hitherto published, even since antiseptic surgery has become the rule, have never shown a smaller gross mortality after excision of the hip than about 36 per cent.

But now, if we can look forward to eradicating the whole tuberculised area at one sitting, and to obtaining primary union of our wound, what an enormous gain will this class of sufferers enjoy. They can leave their bed a week or so after operation, during which there is no painful and frequent dressing; in a fortnight they can leave the house for the country, and thus rapidly regain their vitality. This will enable them to resist any further ravages of the tubercular disease, which so frequently carried them off later on. The dangers of septic wound infection are swept away almost with a stroke, and with them one of those terrors which, in former days, led us to hesitate to operate upon these cases until we were driven to do so in very late stages of the disease, when we had often to sacrifice large portions of the femur and acetabulum. If under the newer *régime* these fears have no ground, and our excision wounds can be made to heal as simply as an osteotomy, we shall be encouraged to operate earlier than hitherto has been the rule, and the consequent results as to functions of the limb will be immeasurably better.

For my own part, encouraged by recent experiences, I look for-

ward to long series of cases of hip excision, not only without a death, but where our patients will be able to walk about upon a strong and but little shortened limb in as many weeks as it formerly required months to obtain a result not so good. [See also *Synopsis* for Mr. Barker's use of "Sterilised Hot Water in Surgical Operations"]—*British Med. Journal, Jan.* 19, 1889, *p.* 123.

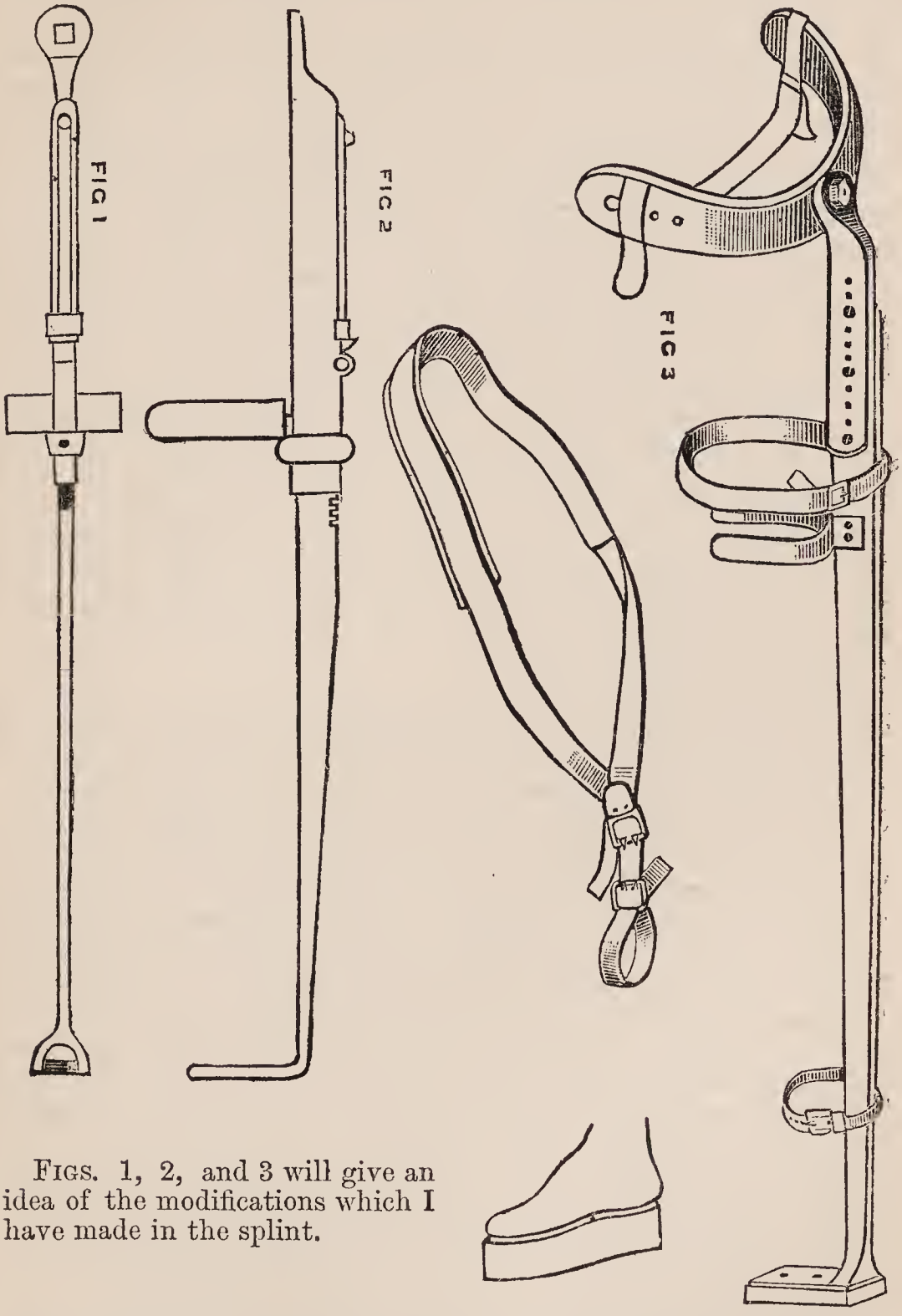
39.—ON THE AMERICAN HIP SPLINT.

By Dr. A. B. Judson, New York.

It will, perhaps, be interesting to inquire whether the name "American" has been rightly given to this apparatus. As first described in 1860 it has two important features: (1) a perineal strap or ischiatic crutch-head, for the purpose of keeping the weight of the body from resting on the affected limb, the patient being thus enabled to wear the splint and at the same time to engage actively in ordinary pursuits; and (2) adhesive plaster applied with the view of making traction on the limb. In regard to these two features, ischiatic support and traction by the use of adhesive plaster, the first was not an American invention, nor was it a novelty. Support of this kind had been used for a long time in the construction of artificial limbs, and even in the treatment of hip disease the possibility of so supporting the body had occurred to M. Ferdinand Martin, a woodcut of whose splint is found in Bonnet's treatise on Diseases of the Joints, published in Paris in 1853. But when we come to consider the other remarkable feature of this splint, we recognise a real advance in mechanical surgery, and one which may rightly be called American. The use of adhesive plaster for prehension of the limb in the treatment of fracture of the long bones was an American invention, and the transfer of this device from the treatment of fracture to that of hip disease was first effected in the new splint. For many years it had been the common practice in the treatment of hip disease to make traction with the long splint for fracture of the femur, prehension of the limb being made by a gaiter, or a fillet, or handkerchief placed around the ankle. These instruments of torture were supplanted in the new hip splint by the absolutely comfortable and convenient adhesive plasters. Thus we see that the new splint was a combination of an old device (ischiatic support) with an American invention (traction by adhesive plaster); and, as the happy combination was made in America, it is not strange that the courteous attitude of European surgeons towards the surgery of a comparatively new country led them to call the new method the American method of treating hip disease, and the new splint the American splint.

Following the history of the hip splint in this country for the past twenty-seven years, one is amazed at the great number of the

so-called improvements that have been made upon it. The most important has been a perfecting of that part of the apparatus



FIGS. 1, 2, and 3 will give an idea of the modifications which I have made in the splint.

which provides for ischiatic support of the body in standing and walking. The first splint did not extend to the ground, but depended on the integrity of the plaster adhesion for keeping the

weight of the body from resting on the affected joint. Dr. Edmund Andrews, of Chicago, and Dr. C. Fayette Taylor, of New York, proposed and perfected an extension of the splint to the ground, and thus left but little to be desired as an ischiatic crutch. Aside from this real improvement, although a vast number of modifications and additions have been made, no essentially important changes have been made in this apparatus. Experience and increasing light have shown that certain things which it was thought that the splint accomplished are mechanically beyond its reach, and that some things supposed to be desirable and even necessary to proper mechanical treatment are of no importance whatever. The two things which the splint does to-day, and which it has done ever since the improvement above mentioned—the two functions of the splint, so to speak—are (1) to make the affected limb a pendent member, resembling in this respect the arm when the patient is erect, which it does as an ischiatic crutch; and (2) to apply traction to the distal member of the joint, which it does by its rack and pinion and its adhesive plaster. Traction protects the joint from the traumatism of motion, muscular or otherwise; and the ischiatic crutch protects it from the traumatism of standing and walking, while the patient runs about and follows the ordinary pursuits of life for the months and years necessary to bring about recovery, with restoration of ability and symmetry so far as may be.

I will close by briefly referring to two points of practical utility. The first is in regard to an early diagnosis, which is especially of great importance, inasmuch as there is reason to believe that, if treatment can be begun sufficiently early, the focus of osteitis in the cancellous tissue may be resolved before the other structures of the joint are involved. Reason for this belief is found in the fact that disease of the joints is comparatively rare in the upper extremity, where a focus, being in a pendent member, may undergo resolution, protected as it is in the nature of the case from the traumatisms which assail the lower extremity in standing and walking. Now, if the lower extremity can be made pendent, as can easily be done by the use of the hip splint, in the very incipiency of articular osteitis of the hip, before the articular contours are changed and before the circum-articular muscles are seriously involved, we may look for resolution of the osteitic focus and recovery without lameness or impairment of motion. To assist in making an early diagnosis, a careful study should be made in a difficult and doubtful case of those limitations in the motions of the joint which become apparent only when the extremes of normal motion are approached. This may be done in various ways. I have found two methods easy in practice and certain in their revelations. The first method applies to rotation, which is a direction in which limitation of motion first takes place. Let the

patient lie supine with the feet slightly apart. With the hand placed lightly on the knee of the unsuspected limb a rocking or oscillating motion is given to the whole limb, outward and inward rotation following each other while the toe sweeps through an arc of nearly 180°, the inner border of the foot striking the table, and the outer border nearly reaching that level. This occurs in the sound limb. A similar manipulation of the suspected limb may reveal a slight limitation of rotation, the result of hip disease. The other simple procedure relates to flexion. Let the patient, still on the table, sit up and kiss the knee. By flexing the neck and back and drawing the limb up with the hands, this can easily be done with the unaffected limb, while an attempt to do it with the suspected limb may reveal a slight limitation of flexion indicative of incipient hip disease. Another diagnostic sign, too little thought of perhaps, but of importance in the very early stage, has recently been referred to by Dr. A. J. Steele, of St. Louis, as "a brawny thickening about the joint in front of the capsule or behind the trochanter." There will in some cases be found a condensation of the soft tissues, due apparently to the vicinity of osteitis, not visible perhaps, but recognisable by palpation or pinching with the thumb and finger, and then often not detected except by comparing the two sides. It will be found that a smaller pinch of the skin and underlying tissues can be made on the sound than on the affected side. These tests are to be used, of course, in connection with other diagnostic helps, and with due regard to other conditions which have the power to produce similar phenomena. Properly used, they may betray the presence of hip disease in a patient entirely free from pain and lameness at the examination.

The other practical point which I would emphasise relates to the position of the limb. Adduction is most to be dreaded. It causes tilting of the pelvis and apparent shortening, which, although technically apparent, produces more disability and deformity than the shortening called real. It is due, as a general thing, to the fact that the patient uses the sound limb more than the affected one in walking, putting the former forward in less time than the latter, and unconsciously keeping the affected limb off the ground more than half of the time, and drawing up and adducting it in order to make it less of an impediment. To prevent or remedy this, the patient, during and after treatment, should be drilled in rhythmical walking, which compels the affected limb (protected by the splint during treatment) to do its full share of the work of locomotion, and leads the patient unconsciously to thrust the affected limb down and to abduct it, so that it may be in the best position to receive the weight of the body and do its share in the work of progression. It is gratifying to witness a recovery in which real shortening is more than counterbalanced by apparent lengthening. Although this may be the

condition when the patient is discharged, the abduction, which is so favourable a feature, may disappear and give place to adduction, with its disability and deformity, if the gait is allowed to become habitually irregular.

In closing, I would deprecate a tendency to complicate the mechanics of the hip splint. If its true functions, which are few in number and simple, and the limitations of its usefulness are duly recognised, it will be found a most useful and convenient appliance.—*Lancet, Dec.* 22, 1888, *p.* 1225.

40.—ON THE FOOTBALL ACCIDENT CALLED THE "POOP."

By George Wherry, M.C.Cantab., F.R.C.S., Surgeon to Addenbrooke's Hospital, Cambridge.

This is a name familiar to football players, given by them to an injury in the front of the thigh, which disables at the time and often brings the athlete to the surgeon for treatment after the accident. Usually the man says "he was pooped"; now and then "my pope was taken." It does not appear to be a local term. The phonetic spelling is given because the best classics among the football players will not hazard an orthography or a derivation. During the game a player receives a blow on the front and outside of the thigh: there is at once a feeling of utter helplessness, but he may recover so far as to be able to continue the play after a short rest, and feel little of it next day, except that he cannot run. The patient comes to consult me the day after the injury, with little pain. He limps in walking. On examination there may be effusion into the knee-joint, a soft and somewhat tender area over the quadriceps extensor femoris, and the patient cannot lift the limb when it is kept extended. Ecchymosis is not common. The amount of knee-joint effusion depends on the position of the injury with regard to the bursa behind the quadriceps tendon, and whether the man has tried to continue his sport, or walked much after the accident. The blow may be in the middle of the thigh, and cause an effusion into the joint; the patient may have forgotten the "poop," and come to complain of the swollen knee. The recovery of the damaged muscle is generally complete, and not as after rupture without a blow, which leaves weakness and a gap easily felt when the muscle is put into action. It seems probable that in the "poop" the muscle is more bruised than broken, so that restoration is complete.

For the treatment a splint is seldom needed. The patient should rest on the bed or couch, using an evaporating lotion until all swelling or effusion has disappeared and the extended limb can be lifted easily. Before he is allowed to walk the front of the thigh should be supported with transverse bands of strong adhesive plaster.

To prevent this accident a protector would be worn for the thigh,

just as players often wear shin pads, if it were not so difficult to keep it fixed during the game. I am more frequently consulted about "poops" than about bad "hacks" on the shins.—*Lancet, Oct.* 6, 1888, *p.* 666.

41.—ON THE TREATMENT OF SEVERE COMPOUND FRACTURE AND DISLOCATION.

By Alexander Ogston, M.D., C.M., Aberdeen.

In compound fractures which are caused by machinery injuries, such as those occurring in factories, in railway accidents, or in injuries from being run over by road locomotives, the force applied is enormous, and the local disintegration is proportionally vast, while in the vicinity are found great and important alterations, to which, so far as I know, attention has not hitherto been specially drawn. They are of two sorts. In the first place, when a great weight, such as a railway train, runs quickly across any part of the body—say a limb—the great and sudden force squeezes all the liquids out of the parts compressed, and injects or squirts them upwards and downwards into the neighbouring textures. They find their way into the loosest parts, such as the subcutaneous spaces, intermuscular spaces, and the yielding tissue surrounding the vessels of the limb. The quantities of liquid thus forced into the uninjured textures are often very considerable, and suffice to establish under the skin large cavities or pockets filled with bloody fluid, varying in size from that capable of containing a hazel nut to that capable of containing the hand, or even to a larger size. The muscles that are not firmly connected with their intervening septa, are often detached from them, and pass without any connection through the centre of a cavity containing bloody fluid. If such muscles are divided in the amputation that may possibly be required, they look bluish in colour, do not retract, and do not bleed, yet they do not always slough, and I have not unfrequently seen them recover their vitality, and take part in the healing of such injuries. When the finger is introduced into the wound present in these injuries, the examiner is often struck with surprise at the cavities into which it can be passed, extending for considerable distances, not only subcutaneously, but also between the muscles and around them and the bones, the connections between the various structures having been entirely or partially broken down.

But in the second place, the centrifugal pressure of the fluids is not the only cause of these denudations, for they are to be found in injuries more slowly produced, as, for example, where a limb has been leisurely torn off by machinery, or where a road locomotive has slowly rolled over a limb. There the skin, to a less degree the muscles, and even to some extent the nerves and

various coats of the vessels, are drawn out by the force that tears off the limb, or dragged towards the crushed part by the wheel of the locomotive. Each structure varies in its capacity for being stretched, and hence is separated from those less extensible, which tear across earlier, and those more extensible, which yield later. Spaces of enormous size are sometimes so caused by stretching.

The dead spaces so arising, filled with fluid prone to decompose, are the occasion of much danger, unless the septicity that is almost certain to occur in them is anticipated and prevented. The accompanying sketch, taken from a case of compound fracture of the elbow, illustrates the extent and situation of the dead spaces; but in many accidents they are greater than those there depicted. Fortunately for our patients, modern surgery affords more opportunities of exploring these cases, and ascertaining their extent, than of dissecting and depicting them.

In bad compound injuries, it is of no little moment that the surgeon who is called in should be aware of the existence of these denudations, and investigate and treat them with the necessary energy and thoroughness. In such cases provision should be made of antiseptic fluids, an irrigator for injection, or in country practice a Higginson's syringe, drainage tubes of the largest size, at least of the diameter of the little finger and a couple of feet each in length, sutures to fix them, and instruments for introducing them. Chloroform or ether having been administered, the wound is enlarged upwards and downwards if necessary, and the disinfected finger employed to examine first the subcutaneous cavities, then those among the muscles and soft parts, and lastly those around the ends of or between the bones. The exploration should be systematically made, so that no cavity passes unobserved, and when the finger is not long enough to explore them thoroughly a probe or other instrument ought to be employed.

That which is most serviceable is a steel bladder calculus sound, with a short beak and a broad flat handle. That known as Mercier's or Thompson's steel sound is the best, and should be a full-sized one. This is usually long enough to reach the furthest end of the cavities, and when there the beak should be turned towards the surface and pressed out, so that the skin and soft parts are elevated over it. A scalpel is thrust through these until it strikes the sound, when the wound may be enlarged to the required extent by cutting, or the skin wound alone be enlarged and the deeper parts torn, after Hilton's method, by opening the blades of a forceps and withdrawing it open through them. The beak of the sound can then be passed out, or the finger in at the wound, and further examination should be made. If the end of the cavity has not been reached, the sound can be withdrawn from its original situation, introduced at the new wound, and the exploration continued in the same way until it *is* reached. An opening for

drainage and irrigation should, as a rule, be made at the furthest end of each cavity. There is no fear of bleeding in making these openings, as a wound so made is not likely to involve any vessel; but, if bleeding does occur, the wound is easily enlarged and the bleeding vessel secured. As each cavity is explored and opened, arrangements for its disinfection and drainage should be made, and, where necessary, counter-openings at the most dependent parts established. A large tube ought to be passed from end to end of the cavity, and, if required, others applied crosswise between two lateral openings, or at one or more of the dependent points alone, until the surgeon is satisfied that not a drop of liquid can remain in the cavity undrained away. Bruns and Mauerer have invented special probes for drawing the drains through large or long cavities, but better than any of them is an ordinary lithotrite, cleaned and disinfected, which is passed instead of the sound until its beak emerges at the wound, when it is opened, the drain seized between its blades and drawn through. The ends of the drains are best left half an inch long, and stitched by a catgut or silk suture, that passes through only one side of the tube, to the edge of the skin. After all the cavities have been so treated, the disinfecting fluid is syringed in by the syringe or irrigator, and the interior minutely disinfected, the surgeon observing at the same time whether the drainage is perfect, and remedying any fault in this respect by the introduction of more or better applied drains. In such a plan of treatment lies the secret of saving life and limb in bad compound fractures, and it is only in the most desperate cases, when the blood supply to the limb is destroyed, that amputation need be undertaken. The drainage and disinfection ensured by periodical irrigation render the course of such injuries, and the disturbance to the general system from them, almost as satisfactory and safe as that of a simple fracture, and in ten days the tubes may be at the latest removed, the dependent openings being however drained for a day or two longer.

It is not uncommon to find, when the adjustment of the bones is attempted in bad cases of compound fracture or dislocation, that the ends of the bones require some attention; they may be soiled and contused, or fissured longitudinally, or they may be difficult to replace in position, and when they are restored may block up the wound, and prevent or impede proper drainage. In every such instance it is a mistake to save the ends of the bones, even if they be, as in dislocations, articular ends. The risk of septic processes is great if they are left, and the healing, even in favourable cases, seldom satisfactory. But, if they are cut off, there is never any drawback to a rapid and favourable cure, while the union in a fracture, or movement of the joint in a dislocation, is more surely obtained than by the alternative method of dealing with them. It is the best course for the surgeon who desires to ensure his

patient's safety and comfort, to cut off the end of the bone, removing one or even two inches fearlessly, and enlarging the wound to do so if this be required. Commonly enough, as it is strong and healthy persons who sustain such injuries, the bones are so dense that they cannot be divided as easily as the bones in weak or diseased persons, and their position in the wound increases the difficulty. Hence, the saw is sometimes the worst instrument that could be selected to remove the ends. It can be more quickly and exactly done, as I have often found, by a mallet and sharp chisel. Enough of the bone should be removed to give free entrance to the exploring finger, and permit of free drainage and irrigation. The examination following commonly shows detached or contused fragments of bone which were unsuspected before, and which should all be freely removed. Our ordinary practice has been to remove far too little bone; it has often seemed to me, on the other hand, as if the result was better the freer had been the removal of bone. The use of the injured limb is quickly regained, the risk of non-union in fracture or of an ankylosed joint in dislocation is very greatly lessened, and the dangers of necrosis and all septic complications almost entirely avoided. Moreover, a point of no little moment, the sufferings of the patient and the duration of his confinement to bed are greatly diminished by the free removal of the bone. It is well to add that it is not necessary to remove the whole length of the bone that may be denuded of periosteum. In compound elbow dislocations, for example, the lower end of the humerus may be stripped bare for four inches or more, while the removal of an inch and a half may be all that is required. The same is true of compound dislocations of the ankle. It should be remembered that it is not the denudation of the periosteum that causes the bone to necrose in such cases, but the septicity along the bared bone, and if the latter is prevented by the proper disinfection, drainage, and regular irrigation necrosis is unlikely, indeed, to occur.

But this is not all. There are further advantages derived from free removal of the ends of the bones in cases of bad compound fracture. If these are retained, as commonly practised, their apposition is sometimes faulty. Wire suture is commonly used for maintaining apposition between the ends. Tenotomy of the tendo Achillis is also constantly practised in leg fractures with the same object. But, saving tenotomy, which is free from danger and often of value, all of these methods are unnecessary, and what is worse, dangerous. It must be said, even of the wire sutures, that their application in these cases favours necrosis, partly by increasing the local lesion, and partly by leaving the ends of the bones to block the wound. If they are removed, as here advised, the spike, clamp, cylinder, and suture are quite needless, and the patient's life and limb are safer.

The treatment of gunshot wounds of bones and joints ought, in my opinion, to be conducted on the principles explained above. In the limited number of cases that I have witnessed or treated, the greatest dangers have been present where recourse has not been had to them; while in those, on the other hand, which have been early subjected to thorough examination, drainage, disinfection, and removal of injured fragments or bone ends, the course has been almost that of a common simple fracture in civil life.—*Medical Chronicle, Nov.* 1888, *p.* 100.

42.—ON ERASION OR ARTHRECTOMY OF THE KNEE.

By George A. Wright, M.B. Oxon., F.R.C.S., Assistant Surgeon to the Royal Infirmary, Manchester.

Erasion or arthrectomy of the knee is an operation consisting in fully exposing the whole of the interior of the joint, and in completely removing the diseased synovial membrane, ligaments, cartilage, and bone without any formal removal of the articular extremities, as in excision. In fact, erasion is removal of all the diseased structures from a joint, and removal of diseased structures only. The operation has been in use in the Children's Hospital, Pendlebury, since 1881. The first case was published in the *Lancet* of that year, under the heading of "Cases illustrating the Surgery of Childhood." In 1883, at the meeting of the British Medical Association in Liverpool, a paper was read entitled "On the importance of recognising the Primary Lesion in Joint Disease." The question of erasion was discussed, and cases were shown. In 1885 a series of sixteen cases was published in the *Medical Chronicle.* The question of priority is unimportant, but it is important to recognise that in certain cases, under certain restricted conditions, the operation yields better results than excision. The operation is, I think, chiefly, if not entirely, applicable to the knee joint, though I have performed it in the ankle and the elbow; but in joints with complex bony surfaces, and in joints where free mobility is an important element, also in joints where the primary and main lesion is bony, the operation can, I think, never have any great measure of success. The transpatellar method is the best. The removal must be most thorough, careful, and complete. Drainage should be through the back of the joint. The results in successful cases are better than those of excision, in that there is no shortening whatever, either immediate or as growth goes on, while the results in other respects are like those of excision, for a firm, stiff, straight limb is obtained. Mobility, though possible, is not to be counted upon. The operation is not applicable to cases where there is great and widespread disease of bone, or where there is much suppuration, or where there is general tuberculosis. It is applicable to cases of disease that resist treatment by rest,

but are not so far gone as to require amputation—in fact, to the majority of the cases which are now excised; though it is admitted that a considerable number of cases still require excision, and are not suitable for erasion. Erasion is, however, justifiable at a less advanced stage of disease than excision would be. The operation is chiefly applicable to children. Cases of both erasion and excision require long watching to prevent distortion, and there is little difference between the two in this respect. I have had many failures, and expect always to have a considerable number of cases in which erasion fails, and has to be followed by excision or amputation; but I think that most of these would have required the severer operation in any case, so that, though the patient has had an additional operation to go through, he has not been a loser.

The noticeable points in the operation are: 1. Full exposure of every cranny in the joint. 2. Absolutely complete removal of all disease, scraping at any doubtful bony spots. Well-localised foci of disease in bone, if of limited extent, are no bar to success. The use of the cautery afterwards is often good. 3. The crucial ligaments should be preserved if possible, as they tend to steady the joint afterwards. 4. The limb should be well fixed until healing is complete; then the patient may get about with crutches and a patten in a Thomas's knee splint, or with the limb fixed in plaster-of-Paris. 5. As in excision, flexion will occur unless the limb is kept fixed for from two to three years at least. 6. In some cases actual lengthening of the limb occurs after the operation, just as overgrowth not uncommonly follows necrosis from acute periostitis.

Since the cases published in the *Chronicle*, I have operated nine times upon the knee and once upon the elbow. Of these, the elbow case and two of the knee cases are incomplete; one will probably ultimately do well, and the other badly, since the patient has general tuberculosis. Of the seven other knee cases, one in which there was far-advanced bone disease required amputation; one in which there was subluxation at the time of the erasion subsequently came to excision; and the other five have done well.—*Lancet, Dec.* 1, 1888, *p.* 1086.

43.—ON CLUB-FOOT AND ITS TREATMENT.

By Alexander Ogston, M.D., Reg. Prof. of Surg., Aberdeen Univ.

Notwithstanding the many methods proposed for the treatment of club-foot, it must be admitted, I think, that we possess none that is satisfactory in every case, and certainly none capable in other than slight cases of rendering the foot and limb as perfect in shape as a normal foot and limb.

This is, perhaps, not astonishing when we consider that most of the plans of treatment are based on conceptions of the deformity which are entirely at variance with the truth. It is still generally

taught and believed, at least in our own country, that club-foot is due to defect in the tendons, some groups being weakened or paralysed, and others opposing them gaining a consequent preponderance. Nothing could be more misleading, and for fifteen or twenty years back this has been universally admitted wherever German literature and investigations are known. No one ever saw a club-foot caused by paralysis; every muscle can be felt and even seen to be acting perfectly. A pes paralyticus is a deformity that can be recognised from a club-foot at a glance, and not once in a hundred times can there be a moment's hesitation in diagnosing them. Yet the student of English literature alone would hardly think so, and, as a rule, he still believes that the adjectives, varus, equino-varus, valgus, and equinus, represent separate diseases to be remedied by the division of appropriate tendons. Many a surgeon, trained to these beliefs, has confessed to me that, misled by them, he has expected and given as his prognosis that the appropriate tenotomy would result in immediate cure, and has been overwhelmed with shame and confusion in the presence of his patients when the operation has been followed by no benefit. Of course it could not, and we cannot wonder that the treatment of club-foot should be a reproach to us so long as our younger surgeons are not clearly taught the truth, namely, that club-foot is an arrest of the fœtal unwinding of the limb, and affects all the structures of the foot, leg, knee, and even thigh. In this place it is superfluous, I hope, to explain, or even defend this view, enunciated by Eschricht and proved by so many subsequent writers.

Of all the structures in a distorted limb, the bones, being the hardest, are the most resistant to rectification. The others, including smaller tendons, are comparatively easily stretched without the use of the knife; and only the largest and strongest ligamentous and tendinous structures, such as the tendo Achillis, should be divided by the modern surgeon. Anything more unscientific than the division of the tendon within its synovial sheath cannot well be conceived, for no union between its divided ends is possible; and anything more useless in treating ordinary club-foot could scarcely be named. It is true that such a destroyed tendon is not missed much; the foot gets along without it well enough, but that is a poor excuse for such surgery.

The bones and tendo Achillis, with occasionally the plantar fascia, are the structures that oppose our rectification, and the older they are the harder it is to overcome them. In the first year of life they can be overcome, though not easily, it is true. With every succeeding year the difficulty of finding a force to overcome them with safety increases, and when early childhood is past we can obviate their deformed shape only by something of the nature of surgical carpenters' work.

Promiscuous tenotomy is both unscientific and unnecessary; but

we can in the first year of life, beginning a few weeks after birth, gradually guide the shape of the limb by applying to it external and suitable force that, acting on it by long periods, will guide its growth into a better shape, curtailing its morbid convexities, and favouring comparative overgrowth along its abnormally concave sides. The form of the limb, by the slow processes of growth of all its constituents, will gradually adapt itself to such external forces. Of these, splints, elastic traction, and apparatus are all inferior, in my opinion, to the method introduced by Hüter, of rectification by repeated applications of rigid bandages. I do not mean that they are always inferior under such exceptional conditions as those existing in an orthopædic hospital, or in patients where unlimited outlay can be had. Under the immediate eye of a skilled surgeon, directing skilled nurses and attendants, the method is of little consequence, as he can do almost anything with any of these means. But in provincial hospitals, where club-foot must be treated chiefly in the out-patient department, and can be seen often only at long intervals, and still more in general towns or country practice, where a cheap and easy method is the only possible one, they are not inferior, they are out of the question.

Hüter rectified the foot a little, fixed it in plaster-of-Paris, removing this and increasing the rectification every few days. The number of cases of club-foot I have treated is 173, and I have found it better to modify Hüter's method in some respects. I prefer beginning at six weeks of age, and then, under chloroform, rectifying the deformities by prolonged and considerable force, applied manually, to such an extent that a great deal is gained, and the foot does not spring back to the old position, the elasticity of its structures being exhausted. Then plaster-of-Paris bandages, made of Cafferatas best plaster (the quality is of the greatest importance), rubbed into narrow, fine, book-muslin bandages, are applied next the skin without intervening flannel or padding, and the foot, retained in position during their application by sticking plaster loops, is held in the nearest approach to normal position obtainable by the hands outside the bandage until it is well set. Bandages next the skin can hardly be kicked off by the child. Each bandage lies, not a day or two, but six weeks, and during that time the patient is not seen, but at the end of that time the mother detaches the bandage with a knife, and brings it back for a renewal of the process. If the bandage be not pulled tight during its application, but laid loosely around, no constriction results, but merely accurate adaptation. I never had to remove but one, and that was, as it turned out, unnecessary. It was in a child aged 7 years, with a nervous mother. The incurved (adducted or varus position) should be completely removed before the plantar (equinus) flexion is meddled with, but once the foot is straight or the anterior part even somewhat abducted, then it should be reme-

died, and the tendo Achillis always divided. It is useless to try to avoid this; in the early days of my practice I have produced a convex sole by trying to do so, for the plantar fascia and structures arching the instep and fixing the medio-tarsal joint will yield rather than the tendo Achillis. The plantar flexion is overcome by dividing the tendon and by manipulating the foot so as to exhaust the elasticity of the structures resisting, and the limb is then fixed in the improved position by plaster-of-Paris similarly applied and extending high enough to keep the knee-joint quite extended, and prevent approximation of the divided tendon ends, that is, up to above the middle of the thigh. I may be allowed to say that the discussion lately carried on in our medical papers as to the safety of separating the ends of the tendo Achillis is uncalled for, and that in Germany, and I believe in nearly all Scotland, it has long been known that in tenotomy separation of the divided ends of a non-synovial tendon, such as the tendo Achillis, never prevents reunion, provided the distance between them does not exceed two inches.

The foot requires three to eight sittings for rectification of its adducted position, and one to three for that of its plantar flexion, depending on the age of the patient; and when it is begun at six weeks of age it is finished by a year, that is, before the child begins to walk. A slight remaining incurvation of the toes is unavoidable in bad cases, and this method, like all others, fails to remedy the knock-knee and other deformities above the level of the foot, which are part of the arrest of development. This method is the best in very young children, but even in those 3 to 5 years old the bones are in some few instances so firm that it is insufficient, even when great force is applied, and in these occasionally, and habitually in older cases, we must have recourse to the carpentry, but it may always be relied on as safe. No harm can possibly be done to the foot, even by great force.

In older cases we have the choice between cuneiform exsection of the tarsus (Davies-Colley), linear osteotomy of the tarsus, Lund's excision of the astragalus, or other methods of less importance. Linear osteotomy of the tarsus by subcutaneous puncture and Adams's saw I have done five times, and have abandoned it. Even after the tarsus is divided, an additional large open wound on the inner side of the foot would be required to allow of any adequate rectification in a really bad case, and such alone requires division of the bones. There is no reason why such a wound should not be made, and allowed to heal by granulation; but we have better methods. Cuneiform exsection of the tarsus I have done three times, and have seen a fourth case in the hands of a colleague. The result in all looked pretty to the eye, but when it was examined with the hand it was proved that fibrous union had occurred, and when the patient walked the heel alone was used, the anterior part of the foot being of no assistance, so that, save

for the look of the foot, the patient would have been about as well off with a Pirogoff's amputation.

Lund's excision of the astragalus is one that is naturally shrunk from. It is a serious undertaking, and not devoid of risk; and until it is tried, it does not seem very likely to succeed at the time or give a good result afterwards. I long shrank from it on these grounds, but eventually tried it in a series of really bad cases, where the patients had been through the hands of many other surgeons, two of them even through those of the surgeons to the London Orthopædic Hospital. I have used it in all in five such cases, and found that the prejudice I formed against it (not unnaturally, I think) was entirely unjustified. In a club-foot it is a remarkably easy and rapid operation, so accessible from the outer side is the bone in this deformity. When accompanied with tenotomy of the tendo Achillis, the rectification obtainable by it as regards all the directions of the deformity seen in the worst cases is incomparably superior to that following any other method. The wounds heal easily, even if second intention occurs (two cases) under a fenestrated gypsum bandage, the children walk soon, and the final result is for such desperate cases almost perfect.

Before I ventured to use Lund's operation I obtained results as good, although the deformities were not quite so severe, by osteotomies of the tibia and fibula carried out on the following lines. In six cases I divided by the osteotome, after preliminary tenotomy of the tendo Achillis, the tibia from the inner and the fibula from the outer side, just above the ankle joint, the operations being on the usual lines of a Macewen's osteotomy, the foot being rectified immediately, and treated by plaster-of-Paris fixation. All healed by first intention, and gave good results. In the earlier ones I dreaded that the bayonet shape of the leg and ankle, produced by the rotation outwards or abduction of the foot, would be a serious deformity. But this was not the case; it existed to a degree invisible under the trousers, and of course gave a more rapid cure than Lund's, with unimpaired movement of the ankle joint.

In four other cases, all likewise less severely deformed than those in which I performed Lund's operation, the division of the tibia and fibula above the ankle was done as follows. A vertical incision over the fibula just above the ankle-joint permitted subperiosteal denudation and removal of half an inch of the fibula. From this gap the soft parts in front of the interosseous membrane and lower end of the tibia were carefully separated by a subperiosteal elevator, and then the tibia was sawn obliquely through by Adams's saw in a plane antero-posterior to the bone, but extending obliquely outwards and upwards from the outer side of the base of the inner malleolus to a point one inch or thereby above the lower end of the tibia on its outer side, well clear of the lower tibio-fibular articulation. Tenotomy of the tendo Achillis had been done as a

preliminary, and it was easy now to rotate the foot, outer malleolus, and detached part of the tibia (which was not removed) into such a position that the sole of the foot would come to the ground throughout. These four cases also healed by first intention, and the cure was quite satisfactory. Three of them were in children, and I have heard of no harm to the subsequent growth of the leg from interference with the lower epiphysial cartilage of the tibia. One was in an adult, a farm servant, who could not work for corns on the outer edge of the foot, but in whom the result of the operation could not have been more satisfactory.—*Brit. Med. Jour., Oct.* 27.

44.—ON THE OPERATIVE TREATMENT OF CLUB FOOT.

By Robert William Parker, M.R.C.S., Surgeon to the East London Hospital for Children.

In gauging the severity of a club-foot at the moment of birth, it must be remembered that the framework is cartilaginous and very yielding, and that considerable deformity may be rectified by the hand; but the deformity quickly reasserts itself when the foot is left to itself. However, it may be stated that in all cases manipulation of the foot should be practised from birth onwards, even if other treatment is not thought necessary. A flexible metal splint can be adjusted to the leg, and the inverted foot bandaged to it, a little more pressure being applied as time goes on. As regards purely surgical measures, even in severe cases, I rarely commence before the child is between three or four months old.

Mode of Operating.—I always give an anæsthetic, for not only does it save pain, but, by abolishing voluntary muscular resistance, it allows the surgeon to thoroughly gauge the amount of resistance he has to overcome, as well as accurately to locate it. I usually apply an Esmarch's bandage. A bloodless operation is thus secured. I do not remove this bandage until pads of cotton-wool or lint have been firmly bandaged over the punctures. In this manner little or no blood is subsequently effused into and among the divided structures. I think this is rather an important matter.

Professor Buchanan recommends that all the cutting be done at once, rather than in stages. In this I quite agree. It appears to me that we never quite know what structures will need division until after division of the tendo Achillis.

In deciding whether and what surgical treatment is desirable, I am guided chiefly by the amount of rigidity present. When deformity is due to shortened muscles, the foot is always less rigid than when the ligaments are chiefly implicated. The physiological fact that the muscles are made to lengthen and shorten, while the ligaments are intended to be unyielding and to resist pressure, sufficiently explains the absence or presence of rigidity. Seeing what a harmless operation subcutaneous section of these

structures is, I confess myself entirely in favour of cutting them, rather than of wasting time in trying to stretch them.

Section of Ligaments and of Tendons.—From the important part played by the ligaments in maintaining the deformity, their unyielding nature and great strength, I attach much greater importance to the section of ligaments (including also the plantar fascia), than to the section of tendons. In fact, with the exception of the tendo Achillis, I think tenotomy in club-foot might be almost abandoned as a separate or independent operation. The two other tendons most frequently cut are the tibials, anterior and posterior. I believe, if it is necessary to divide them, that it should be done simultaneously with the ligaments with which they are closely associated, and that this is most advantageously done at or near their insertions, where they spread out as fibrous expansions closely blended with the capsular ligaments connecting the head of the astragalus with the scaphoid, the scaphoid with the internal cuneiform, and this latter with the base of the first metatarsal bone, all these joints being much approximated by the incurvation of the inner border of the foot. Section of these structures should be practised at, or as near as possible to, the junctions of these several bones to each other, beginning at the astragalo-scaphoid articulation, and cutting so long as any obstruction-bands can be detected, traction being made until the foot is quite straight.

To what extent should Deformity be Rectified after Operation; and the most appropriate Dressing to apply?—My own practice is to rectify the deformity immediately as much as possible. In cases of equinus, there is seldom any difficulty in completely overcoming the deformity. In equino-varus—the cases we are more especially concerned with at the present moment—immediate rectification is not always possible, or it is not possible without exerting more pressure than the living foot could sustain for any length of time together. The amount of rectification will depend upon how far we are able or willing to cut the obstructing bands, ligamentous or otherwise, which hold the foot in its abnormal position. Professor Buchanan recommends that we should do all the cutting at once. In this view I entirely concur. Unless we do so, complete rectification of the deformity will obviously be impossible. Nor is there any valid objection to such a course. I have verified experimentally that there is no reason to fear that tendons, etc., will not reunite, even if their ends are widely separated, as was formerly taught. The question of rectification is of minor moment by side of the still more important one—the division of all retaining bands. For the new embryonic tissue which is poured out in the process of repair will stretch without any difficulty, even if it be left quite alone for two or three weeks, if there are no other structures to hinder it.

Next, as to the most appropriate dressing to apply after operation. I almost invariably apply a stocking of plaster-of-Paris. This exercises an equal pressure all over the foot, which ensures rest and quiet for the incised as well as for the other structures. The foot is manipulated into the very best position that it is capable of, and held firmly until the plaster is hard. As a rule this dressing is not removed for about ten days, by which time the external wounds are quite healed. When the plaster is removed the foot is well manipulated, and then a new dressing is applied, the foot, as before, being held in the best attainable position until the plaster is hard. At the end of a further ten days, more or less according to circumstances, a suitable instrument can be applied. Just as the plaster stocking, which secures the rest so useful immediately after operation, is the best first dressing, so a mechanical shoe of some kind, which can be easily removed two or three times a day, becomes necessary in the later stages, when frictions, manipulations, and passive movement are the essential requirements of successful after-treatment.

Complete cure can only be brought about with time and plenty of common-sense management. There is no surgical operation, however carefully performed or planned, by means of which a club-foot can be at once converted into a normal one; for the foot must assume its normal position, and grow into it as gradually as it assumed and grew into the abnormal position. Even in very severe relapsed and neglected cases of talipes, it is quite remarkable what may be done by time after all resisting bands have been divided.

Tarsotomy.—The question of time, however, is naturally a very important element in many cases. With a view to annihilate this element, and to meet the requirements of certain very severe cases, surgeons have proposed to resect some of the tarsal bones. Dr. Little was the first to make this suggestion, and conceived the idea of removing the cuboid bone in an operation which the late Mr. Solly actually carried out for him in 1857. The ultimate result of this operation was not very encouraging, and orthopædic surgeons almost universally condemned so severe a proceeding, so that nothing more was done in this direction for upwards of twenty years. Mr. Lund removed the astragalus. Mr. Davies-Colley proposed the removal of a wedge-shaped mass of bone from the tarsus. From this time onwards, both in this country, in Europe, and in America, a number of operations have been practised by various surgeons, so numerous and so diverse that it is impossible to mention them all.

Dr. Lorenz, of Vienna, in an admirable essay entitled, "Ueber die operative Orthopädie des Klumpfusses," one of the series of the *Wiener Klinik*, edited by Schnitzler, has tabulated all the cases published up to that time. He divides the operations into:

1. Osteotomies. 2. Enucleations: (*a*) of one bone; (*b*) of two or more bones. 3. Resections of portions of several bones. The tables include 147 cases operated upon by fourteen distinct methods. We shall probably agree with him in thinking that such a variety of operations for the cure of a deformity more or less identical in its fundamental anatomy is suggestive either of insufficiency or of inappropriateness. Among the cases quoted by Lorenz, the operation was performed: 53 times during the first decennium of life; 39 times during the second; and 12 times during the third. In the remaining cases the age is not given. In other words, by very far the largest proportion of the operated cases were children under 10 years of age. One of the cases was an infant 16 months old, at which age the bones are still unossified. Since the publication of this essay several other new operations have been practised, and, if necessary, could be added to the foregoing list.

I entirely disapprove of tarsectomy in any form in infants and young children, on the ground that it is altogether unnecessary. In subjects over about 15 years of age, as an exceptional measure, it may occasionally be entertained. All operators are careful to state that every other method has been tried and failed before these radical measures were resorted to. This is as it should be. But my dissections have taught me to require that free division of the ligaments shall have been practised before I could accept and endorse the statements "all other methods have failed." I think even open syndesmotomy should be resorted to in severe cases before any part of the bony framework is removed. Mr. Keetley has, I believe, tried this plan, and with gratifying success.

I do not happen to have seen any of the children treated by tarsectomy some three or four years subsequent to their operation. On *a priori* and physiological grounds it seems almost certain that great interference with the subsequent growth and development of the foot and limb must result from so serious a disturbance as tarsotomy undoubtedly is. In some few adult cases, much neglected and in which secondary deformity is considerable, I can conceive that tarsectomy may prove advantageous. The cases severe enough to require this treatment, however, are generally found among the poor. When we bear this fact in mind, and think what an amount of work and of walking can be accomplished on even an exaggerated club-foot, I ask what is gained by tarsotomy? If we have to deal with a patient to whom the bettered appearance of his (or her) foot is worth more than any other consideration, tarsotomy may be invoked to our aid. I am sanguine enough to hope and believe that in years to come there will be fewer cases to require so severe an operation as tarsotomy. A re-study of the anatomy of club-foot, a consideration of the

dominant part played by the tarsal ligaments in maintaining the deformity, and an adequate application of this knowledge in treating cases will save the surgeon as well as the patient both time and trouble. There are surgeons who think tarsotomy is indicated on anatomical grounds. I rather think, among these is the distinguished Glasgow surgeon, Dr. Macewen. He considers the operation indicated because the bones are deformed, and regards the club-foot as consequent, dependent upon this. I can only say that among the feet I dissected, specimens of bones were found in which no primary alteration of conformation existed.—*British Medical Journal, Oct* 27, 1888, *p.* 921.

45.—ON THE TREATMENT OF TALIPES VARUS.

By George Buchanan, M.D., Prof. Surgery, Glasgow University.

Although each case differs somewhat from another, yet for practical purposes talipes varus may be divided into three classes. First, those of minor degree to be seen in very young children, and even occasionally in boys and girls of some age, in which the deformity depends on shortening and rigidity of the tendons, fasciæ, and ligaments. In such examples, by continuous force applied by the hand, the deformity can be gradually overcome until the foot assumes a fairly normal position, and can be kept in it by some kind of retaining appliance as explained by Professor Ogston, this manipulation and fixation to be repeated at intervals till the abnormal condition is finally remedied. Secondly, cases in which the abnormal position of the bones is maintained by such a degree of tension and rigidity of the soft parts as renders reduction by hand practically impossible without the division of the offending structures. The sections I find it usually necessary to make are first, always, the tendo Achillis to relieve the equinus part. I never divide the tibialis posticus behind the ankle, being satisfied that such a muscle, as well as all the other muscles arising in the leg and inserted into the foot, can be stretched by sufficient manipulation; but, secondly, the structures which do maintain the incurved form of the foot, the plantar fascia and the muscular substance attached to it—namely, the abductor pollicis and the adjoining half of the flexor brevis digitorum; probably also the part of the deep plantar ligament which binds the astragalus to the scaphoid and other bones distal to it. In order to divide these, which I consider the most resisting tissues, I enter a tenotomy knife at the inner edge of the foot opposite the tuberosity of the scaphoid bone, pass it flatly superficial to the plantar fascia, till the point reaches the middle of the sole of the foot; I now turn the edge of the knife vertical, elevate the handle to depress the point, and cut through and through the plantar fascia and the muscles underneath it until the point is over the articulation between the

head of the astragalus and cup of the scaphoid bone. Here the point is made to cut through the tendon of the tibialis posticus proximal to its insertion into the scaphoid tuberosity, and by the same cut the deep ligamentous fibres are divided, thus completely freeing the astragalo-scaphoid ball and socket joint, which is really the one on which the incurvation of the foot hinges. In doing this the external plantar nerve is wounded, but in my experience it always unites, at least never loses its function. So also the internal plantar artery is divided; but it is a small vessel, and never gives trouble, the foot being nourished by the deep plantar arch from the external plantar artery. In my own experience, involving a large number of operations, and in the practice of others who adopt my operation, including most of those who have been educated in this university and others who have read my papers, not an accident has ever occurred from this somewhat heroic incision; but it has been attended with most fortunate results. There is a third class of cases in which, owing to long-continued pressure from walking on the distorted foot, the bones have been so altered in their shape and relations that something more is required. Some part of the tarsus has to be excised to allow of reduction of the deformity. I would never encourage or consent to such an operation in children of tender years. It is unjustifiable. Manipulation and subcutaneous section are quite sufficient for them. And if we could always get our patients before they are allowed to crush in the foot by walking, then tarsotomy would soon become as rare as it was ten years ago. But unfortunately we do get cases of this pronounced kind, and it will be so in future, and for them this bone removal is required. Excision of the cuboid, excision of a wedge of the tarsus, excision of the astragalus, have all been proposed, and performed, and lauded by their respective advocates. I adopt whichever seems suited best to the individual case. I shall not pursue this subject, but shall ask attention to a mode of operation for excision of the astragalus more simple than most I have seen recommended, and which has been attended with most marked success in a case now in the Western Infirmary. The operation was devised and practised by my father forty years ago for excision of the astragalus for disease. A semilunar incision is made below the external malleolus, beginning at the edge of the tendo Achillis and extending to the tendon of the peroneus tertius. The tendons of the peroneus longus and brevis are divided. The fasciculi of the external lateral ligament are cut, when the foot can easily be twisted inwards, the upper articular surface of the astragalus now looking outwards. The interosseous ligaments between the astragalus and os calcis are divided with the point of the knife, and the astragalus grasped with a lion forceps. It can now be wrenched from its place, any ligamentous fibres which attach it to neighbouring bones being cut.

Little hemorrhage takes place, and the foot can now be replaced and will be found readily to assume a position at right angles to the leg, with the sole in a normal state. In this position it is secured by a suitable splint, and the wound treated antiseptically. What happens to the divided peronei I am not curious to know, as the new ankle-joint performs all its usual movements. But if anyone should be anxious to secure the union, the divided ends should be brought end to end, the two cut extremities can be tied together with catgut sutures.—*British Med. Jour., Oct.* 27, *p.* 926.

46.—ON TWO SUCCESSFUL CASES OF PARTIAL EXCISION OF THE TARSUS FOR TALIPES EQUINO-VARUS.

By F. R. Fairbank, M.D., Surgeon to Doncaster Infirmary.

During the year 1887 two extreme cases of talipes equino-varus in the adult were operated upon by me, according to Mr. Davies-Colley's method, successfully. I beg to offer brief notes of them as a contribution to the discussion on the Operative Treatment of Club-foot. Both my patients were over 40 years of age. In neither of them was the deformity congenital.

The first, J. D., reported that he was all right until about 13 years of age, when he was maltreated by his father and left, he believes, for dead. His feet became gradually so much distorted that when I saw him first he could place only the outer side of the little toe of each foot on the ground, and he could only move about on crutches. He begged of me to amputate both feet, as he thought he would be better off with stumps. I admitted him to the Doncaster Infirmary, and on February 15th, 1887, I operated on the left foot. I first divided the tendo Achillis and the tendon of the tibialis posticus, and then proceeded as directed in Erichsen's *Surgery* (8th edition), making an incision on the outer side of the foot only. The foot was put up in plaster-of-Paris on March 26th, a window being left to dress the wound. By April 27th the wound was entirely healed, and he could easily walk about with a little assistance. On May 3rd he was discharged to go to Southport Convalescent Home.

He was readmitted on June 7th, 1887, for operation on the right foot, which was performed on June 9th. I followed the same line of operation, except that I made a free incision on the inside of the foot as well as on the outside. I found this rendered the operation easier, and gave freer vent to the subsequent discharge. The wounds were kept aseptic, the temperature rising once—the day after operation—to 100° F., but not again. On July 12th, plaster-of-Paris was applied, and he was discharged soon after to again go to Southport Convalescent Home. On January 24th, 1888, the feet were both straight, and he could walk alone well, up and down stairs and out of doors. There was, however, a pro-

jection on the outer side of the right foot over the tarsus, which caused him pain when he had been walking some distance. I therefore removed a further slice of bone. Recovery was rapid, the wound being kept aseptic. His feet are of the natural form, but shorter than is usual. He can now walk well.

My second case, John F., a heavy, broad-built man, aged 41, was admitted to the infirmary and operated upon on April 15th, 1887. He reported that he was not born lame, but that the deformity began to come on after an illness, acute rheumatism (?) when he was about nine years old. Latterly the deformity had increased so much, that for the last five or six years he had been unable to follow his work at the pit's mouth. Walking about caused severe pain, and life was a burden to him, as he could only sit all his time in a chair, and was dependent on his relations. The deformity was extreme, as in the first case, the feet being drawn back and the toes inwards, so that he could only put the outer side of the little toes to the ground. On April 15th, 1887, I operated on the left foot in the same manner as on the left foot of the first patient, dividing the tendons first, and making an incision only on the outer side of the foot. The after-treatment was long and tedious, the man being much out of health, with some chronic bronchial trouble, and the wound became septic. In August he was sent to the Scarborough Sea Bathing Infirmary with the foot put up in plaster-of-Paris.

He was re-admitted to the Doncaster Infirmary in November, 1887, for operation on the right foot. At this operation, as in the second of the former case, I made an incision on the inner as well as the outer side of the foot, and divided the tendons first. The case did very well; only on the day after the operation did the temperature rise to 100°. The wound was kept aseptic, but healed slowly. On January 14th, 1888, plaster-of-Paris was applied with a small window over the wound. He was discharged on February 6th, and has since been again to the Scarborough Infirmary. He can now walk easily without support, and the feet are straight, but shorter than usual.

Remarks.—It is probably in adults that this operation will prove of the greatest service when the bones are deformed. Division of the tendo Achillis and of the tendon of the tibialis posticus before the more serious part of the operation renders it easier to perform, and a better idea can be formed then as to how much of the tarsus should be excised. An incision on the inner side of the foot as well as on the outer renders the operation easier, and gives freer vent to subsequent discharge; besides, if it be not made, there is a risk of sloughing of the skin there from injury from the point of the saw. There is considerable sanguineous discharge after the operation for two or three days, and this should be remembered, or the wounds may become septic. It is well for an

assistant to hold firmly by the toes and allow the foot to hang during the dressings; in this way there is less pain, and a good position is maintained. The foot should be at once put into the normal position, and placed on a back splint with a foot piece. Union of the divided tendons takes place very satisfactorily in this way, and is strong and firm. It was necessary in each foot to divide the plantar fascia very freely, as it was much contracted.—*British Med. Journal, Oct.* 27, 1888, *p.* 933.

47.—ON THE OPERATIVE TREATMENT OF FLAT FOOT.

By Alexander Ogston, M.D., C.M., Aberdeen.

Flat-foot is almost exclusively a disease of adolescence; it now and then occurs in young children, or is due to caries or other inflammatory disease; but in rickety adolescents it is very common, as they are of necessity exposed, in earning their livelihood, to over-fatigue or over-weighting, which their weak osseous structures cannot resist. I have elsewhere written upon flat-foot, and confine myself here to stating that, contrary to those who believe it to be caused by defective action of tendons, I am satisfied it is seldom due to anything else than rickets, nearly all those in whom it is seen during the period of its formation showing the characteristic beading of the ribs found in rickets. The inner portion of the arch of the foot yields at Chopart's joint, and the head of the astragalus slips downwards and inwards from behind the scaphoid bone. After a time this position becomes permanent, and the head of the astragalus altered in shape so that it cannot be replaced, and the deformity ceases to be reducible. Shampooing, electricity, gymnastic exercises of the foot, elastic bandages, mechanical supports, and the many other proposed cures are, in my opinion, nearly total failures; since, although among the wealthy and leisured classes much expense and unlimited time may be devoted to the cure; among the poor, who live from hand to mouth, time and money are just the things they cannot provide, and which in general town and country practice cannot be provided for them. I am convinced, too, that many of the alleged cures of flat-foot are not cures at all, but are due either to the patient tiring of the treatment and disappearing, or to the natural tendency observable in every rachitic disease for the bones and other structures to suit themselves to the deformity and to become strong and free from pain as the general condition disappears, and the new state of matters becomes habitual, even though the deformity remain as glaring as ever to the eye. Some time ago I ventured to recommend to the profession a new operation for the cure of flat-foot, and further experience leads me to think favourably of it still, although I will not assert that the reasons I have just assigned as explaining why many writers have deceived themselves regarding

their cures for flat-foot, may not have, unknowingly to myself, led me into forming too sanguine an opinion of the value of my own proposal. I have endeavoured as much as possible to avoid being so deceived. My proposal, shortly stated, is the following: An incision is made along the inner side of the foot into the medio-tarsal joint, the soft parts shelled off the bones, so as to expose the articulation sufficiently, and then by means of an ordinary chisel the head of the astragalus and the back of the scaphoid are denuded of their cartilage so as to be adapted for osseous ankylosis. In old cases of the deformity the head of the astragalus grown out of shape has to be rounded off so that it can be restored to its proper position before the arch of the foot can be replaced in its original shape. An assistant holds the arch in the right position, and then two pegs of carefully disinfected ivory three inches long are hammered into two holes drilled through the scaphoid and astragalus. This fixes the arch, and when the spare ends of the pegs have been nipped off and the wound sutured the joint heals by bony ankylosis under a plaster-of-Paris bandage.

I have had one occasion to verify the occurrence of complete bony ankylosis. The worst feature of the cure is that it usually needs three months in the plaster before ankylosis is complete and the patient can walk. I have shown the cures obtained to Mr. William Adams, of London, and many other surgical friends. Out of a total of forty-seven such operations, twenty-four of which were for double flat-foot, and therefore done in twelve patients, and the other twenty-three for single flat-foot, I have never seen any failure to heal aseptically by first intention. Most of the cases were cured, and the following are the only failures I have been able to see or hear of. I believe Mr. Joseph Bell removed an unabsorbed peg in one case, although even this patient was reported to me by those who saw it as being cured so far as the flat-foot and its symptoms went. One case operated upon by a colleague was a failure, and I repeated the operation and got a cure, and the same repetition and cure by reoperation happened in one of my own cases. One case complained of pain for a year after, but he was a young lad, and I think a malingerer, for he had such beautiful arches to his feet as the result of the operation that I had him photographed. I should also state that in very bad cases a perfect restoration of the arch is not generally obtained, only a great improvement is effected. In one case the disease seemed to be unimproved by the operation, as the patient still complained of the old uneasiness, but on cutting down it was found that the joint was perfectly united by bone, but that the articulation in front of it, between the scaphoid and cuneiform bones, had begun to give way in a similar fashion to that which affects Chopart's joint in this disease. I left it alone, being unprepared to fix all the joints on the inner border of the foot.—*British Med. Jour., Nov.* 24.

48.—ON DRY ANTISEPTIC WOUND TREATMENT.

By Jordan Lloyd, M.B., F.R.C.S., Surgeon to the Queen's Hospital, Birmingham.

[After brief reference to the important work done by the late Mr. Sampson Gamgee in the treatment of wounds, Mr. Lloyd says:]

I will now briefly describe my present method of operating and of subsequent wound treatment, say, for example, in an amputation through the leg. Every patient about to be submitted to any surgical operation ought to have been confined to bed for at least twenty-four hours, and, whatever the nature of the operation, the bowels should have been cleared. These are points to which too little importance is often given.

The parts are shaven of hair, washed with soap and warm water, well scrubbed with a nail-brush, and are then protected with a cloth wetted with weak corrosive sublimate lotion until the moment of operation. The patient is anæsthetised, the tourniquet applied, and the limb exposed. All clothing covering other parts is protected with cloths wrung out of weak antiseptic lotions, chiefly for the purposes of shutting in the "fluff" of the blankets, dressing gown, etc.—one of the most potent "infectors" in operations as frequently carried out—and also for laying artery forceps, retractors, etc., down upon when they are not actually in use.

The hands of self, and not more than two assistants and a nurse, are scrubbed with hot water and soap, care being paid to the recesses about the finger-nails (another common lurking-place for septic matter). Let there be no misunderstanding as to the number of hands which are to come in contact not only with the tissues of the part itself, but, what is more important, with anything and everything which is to be used at any stage of the whole operation. After these hands are cleaned, see that they are not thrust into pockets, nor used to restrain a refractory patient, by seizing other parts of his body than that which is to be operated on, for here, again, lies another source of infection. Hands are washed, but they are often recontaminated before the operation begins.

Instruments are to be thoroughly washed and scrubbed, and with regard to these I will merely mention the localities in which infective material is most likely to be overlooked: first, the teeth of artery and other forceps; secondly, the eyes of needles; thirdly, the chequered handles of knives; fourthly, the teeth of saws; and fifthly, the chains of *écraseurs*.

Sponges I never use. I fear them most in hospital practice. There is no way of assuring yourself of their cleanliness. Theoretically no objection can be sustained against them, but practically they often betray us. I use instead pieces of new lint, about fourteen inches square, usually two or three being sufficient for major operations. These are swilled out in warm water by the nurse.

When the limb is off, free bleeding points are tied with catgut ligatures; capillary oozing is checked with hot water. I always endeavour to stay the last leaking point, but in the majority of cases I am bound to confess that I fail to secure that dryness of surface which theory says is essential to primary union. Small clots between wound areas give me no uneasiness. I have seen Gamgee shut up freely bleeding flaps and still obtain primary union. "Securing the last bleeding point" often means prolonged operation with all its evils, as well as the unnecessary bruising of tissues which follows from the inevitable "mopping" attending the discovery of troublesome points.

Before closing the wound the whole raw surface is thickly covered with finely powdered boracic acid, rubbed gently but thoroughly into the parts, attention being directed to the connective tissue plains around muscles, vessels, and nerves. The procedure is precisely like that adopted by the cook when "salting" hams. Several drachms, sometimes ounces, of the acid are shut up in the wound, and are never seen any more. The "salting" constitutes an essential part of the dry antiseptic process which has given such good results in my hands. Wound edges are sutured sometimes with silk, at others with silver, for which latter, however, I have no preference over fine iron wire.

Drainage is best arranged for when the wound is nearly closed. A finger introduced at this stage discovers the deepest, most dependent recesses, and into these large rubber drainage-tubes are directed, and are brought out as a rule at the angles of the wounds, but sometimes special incisions are made through the tissues and skin of a posterior flap for the purposes of shortening and of perfecting drainage routes. The ends of the tubes are left several inches long, and the dressings arranged so that the ends project outside their outermost layer. In this way all early serous discharge is carried right away at once, and the tubes can be withdrawn early without removing the dressings.

The wound being closed, it is dusted over with powdered boracic acid, and covered by a single strip of lint soaked in a saturated solution of boracic acid and glycerine, outside which are placed two or three thicknesses of Gamgee absorbent tissue, cut and arranged so as to exercise equable pressure over the face of the stump and the lower twelve or eighteen inches of the limb. A simple layer of gutta-percha tissue is next applied, large enough only to extend to a point some two or three inches above the limit of the wound. The whole dressing is now secured by gauze bandages which encircle the limb to its uppermost limit. Millboard splints, covered thickly with common wadding, are adapted outside the dressing, and are secured with ordinary bandages.

If during the forty-eight hours following operation temperature and pulse remain normal and pain is absent, I simply withdraw the

tubes, and leave the dressings otherwise undisturbed. The meddlesome inquisitiveness which directs us to expose all wounds within twenty-four or forty-eight hours simply for the purpose of seeing how they are going on is calculated to do a tremendous amount of harm. Not a few primary unions are spoilt by the practice. It has always appeared to me like to the child who sows seeds in her toy garden, and digs them up next day to discover what progress they have made. Recent wounds should be dressed only in response to three demands—high temperature, quick pulse, and pain. If all are absent, practice teaches me that satisfactory progress is being made, whatever theory would suggest to the contrary. In the absence of any of the above indications, I leave wounds undisturbed from one to four weeks, dressing them only to remove sutures in amputations, tumour excisions, etc., to assure myself of accurate position is osteotomies and joint exsections, or to perform a further step in operations such as gastrostomy. If primary union is found to have taken place throughout the whole or greater part of the wound, similar dressings are again applied; but if free suppuration has occurred, I abandon dry and infrequent dressings altogether, and use one of several other kinds, particularly adapted to the rapid and continuous and thorough removal of purulent products. In cases with what I regard as "inevitable suppuration" —most sequestrotomies, for example—after the first boracic acid dressing, I am fond of applying pieces of coarse scouring flannel, moistened with carbolic lotion (1 in 40), changed two or three times during the twenty-four hours, and continued until wound surfaces have cleaned and are covered with healthy granulations. I know no material which sucks up discharges with greater avidity.

I have used dry boracic dressings in major surgical operations of all kinds, and primary union has followed in the vast majority of cases. I have opened the abdominal cavity scores of times, the cranial cavity in many instances, and the cavities of joints on numerous occasions, and have never seen more than the merest trace of suppuration in any of the wounds.

I have had hip-joint amputations soundly cicatrised, and patients sitting up on the twelfth day. Failure to secure primary union in breast excisions comes as a bitter disappointment. I purposely avoid detailing cases in this paper, because I believe that no useful practical end would be served thereby.

My own experience of surgical dressings began at the General Hospital at a time when Listerism had attained what was considered its highest perfection, when operations were performed in a cloud of carbolic steam, and patient, and operator, and assistants practically swam about the theatre in floods of antiseptic fluids. None amongst my earliest teachers had a more thorough conception of what Listerism could do, none followed the precepts of his enthusiastic leader more energetically, no disciple of the germ

theory was more conscientious, than the late William Preston Goodall. In his practice I gained my first experience of perfect primary unions after major operations: and without saying my present results are better than what I saw then, I am sure they are as good, and are secured with less labour to the surgeon, with less expense to the hospital, and with less suffering to the patients.

In conclusion, I would add my belief that no small measure of my success is due to the introduction *into* the wound of the non-irritating, non-poisonous, and reliably antiseptic, dry, and absorbing powdered boracic acid.—*British Med. Journal, Jan.* 19, 1889, *p.* 124.

BRAIN AND NERVOUS SYSTEM.

49.—ON TRAUMATIC SUB-DURAL ABSCESS OF THE BRAIN.

By Sir William Stokes, Professor of Surgery, Royal College of Surgeons, Ireland.

[In the communication from which the following excerpt is taken, Sir William Stokes refers particularly to the Sub-dural variety of Cerebral Abscess, perhaps the rarest form of intra-cranial suppuration, and of which he has been able to find only eleven cases on record where operative interference had been undertaken. This number includes two cases occurring in Sir William's practice, brief abstracts of the narratives of which are here given. Cases by Dupuytren (a foreign body had been impacted in the skull for several years and ultimately gave rise to a sub-dural abscess, which was opened by trephining with complete success), Lawrence (the injury to the head preceded death from abscess of the brain by almost five years), Roux, Cæsar Hawkins, Fenger and Lee, Rentz, Macewen, Hulke, Paget, and Marshall are also referred to.

The following are brief abstracts of the records of Sir William Stokes's cases:—

Case 1.—A man, aged 26, was struck over the left temple with the handle of a reaping hook. He was stunned by the blow, but no other immediate bad consequence of the injury occurred. For some weeks after he was able to continue at his work, suffering only occasionally from headaches. He then fell and became insensible, with extreme myosis, slow pulse, retention of urine, and complete paralysis. Sir William Stokes trephined at the seat of injury and evacuated about a drachm of clear straw-coloured fluid from beneath the dura mater. Some relief followed the operation, but the patient died the following day. At the post-mortem, two and a half ounces of healthy cream-coloured pus were found immediately under the dura mater, $\frac{1}{20}$ inch behind the point of operation.

Case 2.—A man, 24 years of age, was struck with a poker on the

forehead, about an inch to the left of the middle line, producing a small scalp wound. He went to his work in 48 hours, and continued at his employment for seven weeks. At the end of this time he complained of dizziness, and felt sick and drowsy, and vomited off and on for a week. Shortly after this he had some difficulty in speaking. On admission to hospital the scalp wound was still unhealed, and denuded bone could be felt in it; he was extremely drowsy, pulse 42, pupils even but contracted. He grew rapidly worse, and in two days he had a convulsive seizure confined to the right side, which lasted about three minutes. Sir William Stokes now trephined at the seat of injury, and after some unsuccessful explorations of the brain substance succeeded in getting pus, probably from the vicinity of the lateral ventricle. At the end of thirteen days the patient was practically well. For nearly nine months after the operation he remained perfectly well and quite able to follow his employment as a wall plasterer. It was then stated that he got a fit, from which, however, he recovered, and returned the following day to his work. The morning after this he was found to be in a state of complete insensibility, with right hemiplegia, and a rapidly rising temperature. The seat of the original operation was opened up, but no pus found. Some serous fluid escaped, but he died the following day. There is no mention of a post-mortem examination in the record.]

Among the points in these cases which are of special interest and deserving of consideration are—first, the etiology of such cerebral abscesses, and also the remarkable latency of the symptoms usually connected with them. The two cases I have recorded in this communication do not—owing, doubtless, to the paralysis in both cases having been so profound—throw much light on the subject of the localisation of cerebral function; a subject which at present is so largely exercising the surgical mind. As regards their etiology, we must, I think, accept the views held by my late colleague, Dr. M'Dowel, and also Sir W. Gull—namely, that the traumatic forms of these abscesses are mainly due to a primary phlebitic condition of the veins of the diploe, which vessels, from their intraosseous position, are specially prone to absorb fluid, and that, as results of this, death of portions of the cranial wall occurs, and ultimately cerebral abscess.

The symptoms connected with this condition must necessarily vary much. In the first place they depend largely on the locality in which the abscesses form. Thus it has been pointed out by Huguenin, whose remarks are quoted by Dr. J. Burney Yeo in his valuable paper on this subject, that when the abscess occurs in the temporal lobes "the difficulty of diagnosis is increased by the circumstance that no bands of fibres which are direct conductors of sensibility or motion pass through this lobe." An abscess, therefore, may attain a considerable size, and may cause general

symptoms of compression before any distinct symptoms of disease arouse the suspicion of a localised affection of the brain; and for this reason the acute abscesses belonging to this category in the great majority of cases have not been positively diagnosticated.

The latency of the symptoms may be due, therefore, to the occurrence of the abscess in particular situations, or to the brain being able to endure up to a certain point an amount of pressure, when slowly and gradually applied, which, when suddenly received, as in the case of hemorrhage or bone depression, it cannot tolerate. It seems to be analogous to what occurs in the spinal cord in cases of vertebral caries, and spinal fracture or diastasis. In the former the cord becomes, if I might so express it, acclimatised to the pressure it sustains, consequent on the great, and at times grotesque, alterations in the shape of the column, resulting from caries of the bodies of the vertebræ. In the case of fracture or displacement, however, even when the pressure on the cord is slight, but suddenly produced, the symptoms of paralysis are promptly and distinctly manifested.

From the foregoing observations and cases which I have adduced, the following propositions may, I think, be stated:—(1) That after the primary symptoms of cerebral traumatism have subsided there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formations whatever. (2) That their appearance is, as a rule, sudden, and if uninterfered with they run a rapidly fatal course. (3) That the occurrence of pus production resulting from cerebral traumatisms is not incompatible with a perfectly apyrexial condition. (4) That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation. (5) That both as regards colour and consistence there is great variety in the contents of cerebral abscess cavities, and that, as shown in Wilm's case, published by Rose, of Berlin, they may become transparent. (6) That antisepticism has largely diminished the risks of the operation of trephining. (7) That, having regard to the great mortality of cases of cerebral abscess when uninterfered with—viz., from 90 to 100 per cent.—the operation is indicated even when the patient is *in extremis*. (8) That, in the case when the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed. (9) That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated. (10) That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation. (11) That drainage is desirable in the after-treatment of such cases. (12) That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required. —*Dublin Journal of Med. Science, Oct.* 1888, *p.* 282.

ORGANS OF CIRCULATION.

50.—ON THE TREATMENT OF NÆVI BY ELECTROLYSIS.

By Lewis W. Marshall, M.D., Surgeon to the Children's Hospital, Nottingham.

I am induced to give the experience of about ten years' use of electrolysis in the treatment of nævi, because in my hands it has answered so well, and seems to possess advantages which none of the more commonly adopted methods of dealing with these growths can be said to have. Even amongst those who apply electrolysis there is some difference of opinion as to the value of the negative or positive pole for this purpose, and an equal amount of difference exists as to the wisdom of substituting a rheophore for a needle to complete the circuit. Having preferred to use electrolysis to any other plan of treatment for many years in all nævi, I have, at least to my own satisfaction, formed some general opinion upon these points of difference for future guidance.

Before passing on to the consideration in detail of electrolysis, I should wish to mention in what I consider the older plans are deficient. 1. *Ligature:* This treatment has always appeared to me to be barbarous in the extreme, because the after-suffering, even though the skin be carefully omitted from the ligature, is very great. The scar left is a very uncertain quantity, and not in other ways satisfactory. It cannot either be claimed for ligature, however done, that it is invariably successful. For nævi about the face, eyelids, nose, lips, tongue, and possibly near the fontanelles, all of which places are common situations for this form of growth, ligature is most inapplicable, because of the uncertainty as to its results. The loss of tissue involved being a factor of considerable moment in some of those parts named (lids, nose, lips) and in others (the tongue), for obvious reasons it is unsuitable. For these reasons I have entirely abandoned the ligature. 2. *Excision:* For the removal of angiomata on the trunk this operation is very suitable; the faint scar which is left when healing is rapid (and this is usually the case if proper dressing and care be used) being of no consideration. This plan, although it is effected by "cutting," as the friends express it, is not so much objected to by them, because they are glad to be rid of the matter speedily. Blood loss is always of moment in young infants, but even large nævi may be removed in this way with a fractional loss if care be taken to be well outside the capsule. 3. My knowledge of *injection* is most limited, but the risks are stated to be not inconsiderable by those who are in the habit of using it. 4. The simpler methods of treatment, such as ethylate of sodium, liquor arsenicalis, &c., are all more or less failures in my hands, the former (ethylate) being also, I find, a very painful application,

which its originator states is not the case. The bulbous cautery is most useful in nævi on the tongue if cocaine be first injected or painted over the surface.

Electrolysis.—By its use we get: (1) an operation which gives no after-pain; (2) it is free from danger; (3) there is no bleeding; (4) the scar is white, and does not tend to contraction in loose structures like the eyelids. In adopting this plan, it is necessary at once to recognise the fact that it is not usually expeditious in its action; this is its chief drawback, because parents are apt to clamour for some obvious effect to be produced, and are loth to wait with patience for the gradual fading of the nævus, by which we get our best results. Occasionally, nævi may be cured at one sitting without sloughing, and they may speedily diminish; but this is in my experience uncommon, and it is not wise to attempt to obtain so rapid an action, because the chances are against the effect being good. Stop the growth and be content to wait is the better method, re-attacking if development takes place or its subsidence is long delayed. I always use the positive pole with one or more needles, according to the size of the growth and its situation. The needle (or needles, as the case may be) is moved about systematically to attack the growth in various parts. This is done without withdrawing the needle after it has remained long enough in one spot to produce some effect. It is wiser at first to work well away from the surface of the tumour, especially in raised nævi which are very florid, to avoid risk of destroying the thin covering. The circuit is completed by attaching a rheophore to the negative pole; by this we avoid an unnecessary puncture, and I find that the process is equally effectual. I have not yet succeeded in finding a good means for insulating needles, and the scar left by the negative needles is brown and very disfiguring. I prefer to use the positive instead of the negative pole, because it is slower in its action and therefore less likely to lead to sloughing, and the bleeding on withdrawal of the needle is much less troublesome. The objection to the scar left by the negative needle has already been referred to. The number of cells used, I find in my notes, varies somewhat, but my usual custom is to commence with five Leclanché cells (Silvertown Battery Company), and increase according to the effect produced. Ten cells are generally sufficient, but in deep subcutaneous nævi I have applied twenty cells. The amount of tension caused must be carefully gauged, cutaneous nævi being capable of standing very little. Change in colour to a dusky hue is a good guide to judge when it is requisite to stop the current. I arrived at the conclusions detailed here by testing the number of cells and their effect on nævi on the trunk where scarring was of less importance. On withdrawal of the needle, all that is required is to rotate it before pulling to free it, and then paint the orifice with collodion.—*Lancet, Jan.* 12, *p.* 73.

51.—ON THE VALUE OF ELECTROLYSIS IN NÆVUS AND ANGIOMATOUS TUMOURS.

By John Duncan, LL.D., F.R.C.S.E., Surgeon to the Royal Infirmary, Edinburgh.

[Mr. Duncan's paper opens with the narratives of nine unusual cases of Angiomatous Tumours of various kinds, in which Electrolysis was employed. We can reproduce here only the main facts in a few of the cases, and Mr. Duncan's general remarks upon the value of electrolysis in such conditions.]

Case 2.—A nævus, the size and shape of a medium-sized Jaffa orange, situated behind the ear of a puny child three months old. Three electrolytic operations sufficed to effect a cure, no mark or trace being left.

Case 3.—The nævus occupied the anterior and chiefly the outer part of the foot in a child eight months old. It did not involve the skin in the slightest degree, but reached completely through the foot from dorsum to sole. The fourth metacarpal bone was very greatly enlarged and involved in the nævus change. It was clearly amenable to no other treatment than amputation or electrolysis. "The case was one of those in which the advan- "tages of electrolysis stand out in the clearest manner, because it "was really the only available method, was free from danger, and "with time and perseverance was absolutely certain of success." After six operations the tumour has become greatly consolidated and steadily diminished in size.

Case 4.—An extensive cavernous angioma occupied the bend of the elbow, and extended over a large part of the anterior and inner aspect of the upper arm in a young lady. Injection of perchloride of iron had caused sloughing and great danger from septic poisoning. Many operations were performed at intervals during more than a year and a half with complete success.

Case 8.—J. M., aged 11. Five months before I saw her she wounded her right lower eyelid with the broken rib of an umbrella, which caused free bleeding and extravasation. After a few weeks the eye began to protrude, and diplopia occurred. On admission to the infirmary thrilling pulsation could be felt over the eye, most markedly towards the inner side. At each pulse the eyeball was protruded, and pulsating veins could be seen in the upper lid. A purring murmur could be heard all over the head from forehead to occiput. *Operation*, June 25th, 1886.—The needles were inserted and the current passed for about fifteen minutes. Considerable ecchymosis followed their withdrawal, and on its subsidence great improvement was manifest. A second operation of seventeen minutes' duration was performed on July 15th, and on July 28th the patient went home with the exophthalmos nearly gone and the pulsation imperceptible. She was to return if any

recurrence of the disease manifested itself, but has not done so, and has unfortunately been lost sight of. Practically the disease was cured when she left, and I have no doubt continues so.

Case 9.—A. F., aged 3. Two years before admission to the infirmary, she ran against a knitting needle, which punctured the lower eyelid near the inner angle. There was no hemorrhage, but quickly much swelling and extravasation ensued. On its subsidence, a divergent squint became manifest, and the eyeball began to protrude. On June 10th, 1886, I saw her, with Dr. Argyll Robertson and Dr. Joseph Bell. Considerable exophthalmos was found, with strong pulsation and thrill of the orbital contents, especially towards the inner angle. A murmur was heard over a wide area of the usual rough to-and-fro character. The symptoms were decidedly on the increase. It was determined to electrolyse the growth, which was accordingly done next day, the operation lasting about half an hour. This was followed by considerable swelling and ecchymosis. As this subsided, the child's complaints of the eye trouble quickly ceased. The *bruit* and pulsation steadily diminished, and, with the exophthalmos, had almost disappeared when the patient left a fortnight afterwards. On January 17th, 1887, the patient was brought back for examination. There were a few slightly dilated subconjunctival veins, and, on careful comparison, it was thought that the left eye protruded somewhat more than the right; but there was no *bruit* or pulsation, and, ophthalmoscopically, the eye was found to be quite healthy and the sight good.

[Two cases of cirsoid aneurism of the scalp were also treated successfully by electrolysis.]

These cases may serve to illustrate the value of electrolysis as a means of treatment for vascular tumours. In looking over the records of angiomata which have come under my observation of late years, I have been struck by the fact that I operate by electrolysis in more than two-thirds. This, however, is doubtless chiefly due to the fact that the medical friends who are good enough to send me cases choose those which are either unusual and serious, or specially fitted for cure by electricity; and it is therefore important to define accurately the precise position of electrolysis in relation to other modes of treatment. I have already pointed out, but I think it well to reiterate, that electrolysis is the best treatment we possess, and, in some cases, the only one for nævi, in which the three following conditions are coincident—namely: 1, that the growth is extending; 2, that it is important to avoid a scar; 3, that the subcutaneous bears a considerable proportion to the cutaneous part of the tumour. If the growth be not extending, it is unnecessary to interfere, because more than half the total number of nævi of the mixed and subcutaneous type spontaneously diappear. If it be not of importance to avoid a scar, there are other methods of treatment, such

as excision and ligature, which are equally certain and more speedy. If the nævus be a pure port-wine stain, it will not spontaneously disappear; but, on the other hand, neither electrolysis nor any other method can be relied on to cure it without also destroying the skin in which it lies. Certain exceptions, however, must be made to these general propositions. When a mixed nævus has prolonged its existence into adolescent life, it ought to be treated, because there is no further hope of its disappearance. When a mixed nævus extends over a wide area, even although it be of little importance to avoid a scar, the perfect certainty and safety of electrolysis gives it the preference over every other method. In the pure port-wine stain success may sometimes be attained by the long maintenance of an artificial dermatitis.

The first case I have related is a good illustration of the class which is beyond the reach of treatment of any kind. The second is a typical example of the nævi in which electrolysis is our best treatment, because it is safer and more certain than any of the methods which avoid a scar. The third is a case in which the only possible alternative to electrolysis was amputation. The fourth, as occurring in an adult, is an example of the nævus in which it is no longer possible to hope for spontaneous cure, and in which the only treatment short of amputation is electrolysis. The fifth case is one of those which, continuing into adult life, sometimes then become truly dangerous from rapid pulsatile spread, and the possibility of hemorrhage from injury or ulceration. Indeed, in this case ulceration had actually begun to manifest itself. The more dangerous and less effective method by the injection of coagulants was the only possible alternative.

The two cases of cirsoid aneurysm illustrate the value of electrolysis in this form of disease. I have now operated in eleven cases without failure or accident. There is, indeed, no alternative but expectancy. I find, however, that this statement is not yet generally accepted by surgeons. In a case sent to me by Dr. Beatson, of Glasgow, and cured three weeks ago by one operation, the patient had received many varieties of advice, of which the most reasonable was to leave it alone, the most dangerous was to ligature all the affluents and excise. The most reasonable plan, I say, is to leave it alone if the surgeon is not acquainted with the effects of electrolysis, because the disease is slow in its progress, and, except from traumatism, little dangerous, while all other methods of treatment are either very formidable, very ineffective, or both. I have no hesitation in saying that the only justifiable method of treatment for cirsoid aneurysm is electrolysis. Its perfect safety and reliability ought to determine its use, even though the tumour be not enlarging. I would here distinguish true cirsoid aneurysm from what may be called aneurysm by anastomosis, or that form of angioma which consists of large cavernous

tissue, communicating on the one side with enlarged arteries, on the other with dilated veins. A considerable number of them may likewise be cured by electrolysis, but I confess to having failed in one or two large and exceptional cases which I have elsewhere recorded.

The eighth and ninth cases are examples of traumatic arterio-venous aneurysm, and the only two which I have had an opportunity of treating by electrolysis. The situation prevented the application of any other remedy, and the success was gratifying, although not more than was to be expected.

A word only remains to be said as to the *modus operandi*. I find that I habitually work with a current of between 40 and 80 milliampères; but that is really a matter of small importance. A galvanometer is of no value in operations where the duration is determined by the palpable and visible effect produced. It is very different in cases where you cannot see and feel the gradually increasing swelling, tension, and hardness. There a means of measuring the current in operation is essential. Four to eight cells of large size and good electro-motor force are most convenient to work with. It is not necessary to use a large number of cells if both poles be introduced as they ought to be. The body is as good a conductor as acidulated water if the resistance of the skin be avoided. I introduce both electrodes (insulated, of course, so that the operation may be truly subcutaneous), but I work chiefly with the negative pole. It is to be remembered that the effect is produced mainly by shrivelling up and destroying the vascular walls, and that coagulation of the blood is a matter of very secondary importance; therefore, I keep moving the negative pole about and penetrating as many vessels with it as I can, because its destructive effect is more powerful and diffuse than that of the positive. I maintain it in one place just long enough to bring about a decided effect, and then change to another.

In these operations the process is essentially distinct from that by which Apostoli and others have produced their effects upon uterine tumours. However his results may be brought about, it is not by electrolysis proper, it is not by the decomposition of fluids and solids at the poles of the battery. It may be neurotic or vascular or trophic or osmotic, it is not electrolytic, and to call it so is no doubt a misnomer. I have for several years, however, been applying electrolysis in the way I describe to various forms of goître with very striking results, and I have been impressed by the fact that on several occasions the desired effect has been produced by one operation. This was the case, for example, in two out of three cases sent to me by Dr. Watson Campbell, of Duns. I have not yet had sufficient experience to be able to define with precision the value of electrolysis in goître. I can only give the results so far as they have gone. [See "Goitre" in the *Synopsis.*]—*British Med. Journal, Nov.* 3, 1888, *p.* 985.

52.—ON THE METHOD OF OPERATING FOR TRACHEOTOMY IN DIPHTHERIA.

By Robert W. Parker, M.R.C.S., Surg., East London Hospital.

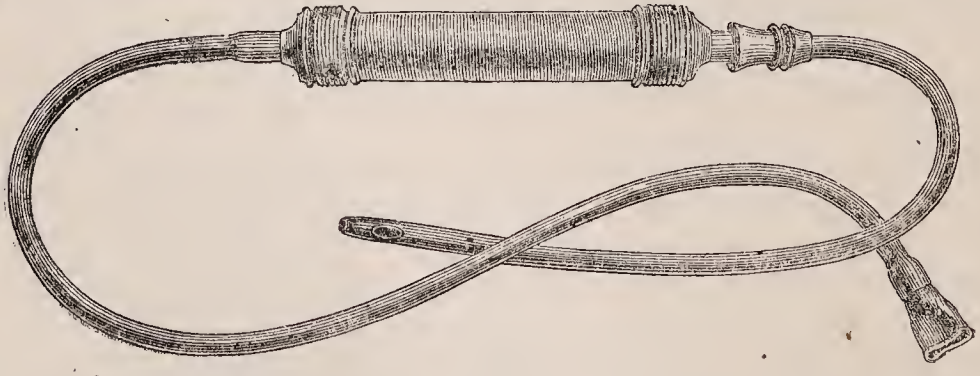
In my last five or six operations I have entered the trachea by means of two incisions only, the first including the skin and fascia, the second opening directly into the trachea. Formerly, I regarded the operation of tracheotomy as of little moment in cases of diphtheria; but longer experience of such cases teaches me that the mere fact of incising the tissues of the neck adds a material danger to the original disease. Considered from the most modern standpoint, the local disease is due to the necrobiotic action of certain micro-organisms on the cells of the affected parts, and the constitutional symptoms are due to the absorption of poisonous substances (chemical or otherwise) which these micro-organisms produce. This being so, it is easy to conceive that an operation, and in such a region too, should be a source of danger. The tissues are incised, blood and lymph vessels are cut across, and intermuscular planes and the soft cellular tissue around the trachea are disturbed and exposed. Thus so many fresh channels through which septic materials may be absorbed are opened up to the infective surroundings, and to the discharges which begin to issue from the trachea as soon as the operation is completed, and it is well known how readily freshly incised wounds become infected when exposed to septic influences. In this connection it will be remembered that the late Professor Trousseau used to teach that a tracheotomy wound should be well painted with nitrate of silver from the very first in order to lessen the chances of septic infection. Under such circumstances, the obvious surgical indication is to try and secure a free opening into the trachea with the least possible disturbance of the surrounding parts. The more virulent the case, the greater the need of this care.

I find, as the result of five or six trials, that everything can be attained by the method of operating by two incisions. In order to be perfectly safe, the incision must be in the median line. After the skin and fascia have been incised, the operator looks for the "white line," the linear interval between the muscles of the two sides. It will be remembered that the muscles do not quite meet, and that, in point of fact, there is nothing between the trachea except the cervical fascia (the so-called white line) passing across the muscles on the right to those on the left side. In short necks, and where there has been severe dyspnœa, some distended veins may be seen, but these can be avoided with a little care.

Having found this white line, a suitable narrow bladed scalpel is plunged into the trachea at the upper border of the thyroid

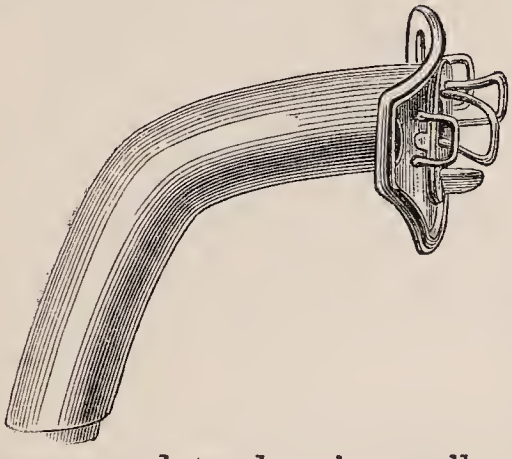
isthmus, and made to cut its way out again just below the cricoid cartilage; or this latter may be divided, if necessary, to make more room for a good sized tube. A pair of dilating forceps is then passed in, and the opening kept patent. Should any vessel spurt, a pair of pressure forceps can be clipped on.

At this stage of the proceedings some operators insert the cannula without more ado. Personally, I regard such a practice as highly detrimental to the interests of the case. If the incision into the trachea is held open with the dilating forceps, all immediate danger to life is past, and the surgeon's opportunity for local treatment is now come. All false membrane and other inflammatory products should be cleaned out of the trachea and larynx before the cannula is inserted. For this purpose nothing better can be used than a long soft feather, and a solution containing either a little soda, potash, or borax. The feather is introduced and twirled about gently, so as to detach the loose membrane. The presence of the feather in the trachea causes a little reflex cough, and the loose membranes are ejected. Should this fail suction may be tried. I refer to suction in this place in order emphatically to condemn the practice of putting the lips to the wound. Direct suction has never proved of the slightest service to the patient, though it has cost many a man his life. The cases in which suction is likely to be beneficial are those in which the disease has passed down below the tracheal opening into the primary bronchi. In such cases I have many times seen life prolonged or saved by carefully applied suction. For this purpose a guarded catheter may be used if nothing better be at hand. I have, however, had a special instrument made for the purpose, which I always carry with me when about to operate.



This consists of a tube of transparent celluloid, filled with antiseptic cotton-wool; attached to its upper extremity is a mouthpiece, to its lower extremity a soft flexible catheter, long enough to pass into the main bronchi. With this instrument pieces of membrane or inspissated discharges, which may be blocking up the bronchus and impeding respiration, can be quickly dislodged, while the operator is absolutely protected from harm by the intercepting and antiseptic wool which the instrument contains.

The Cannula.—After clearing out the trachea and larynx, the cannula may be introduced. The large number of differently shaped cannulæ which can be got from the instrument makers sufficiently testifies to the differences of opinion existing among surgeons even on this point. For the purposes of this discussion I will say that all tubes with a rigid collar ought to be condemned as unfit for service. I think, too, that all quarter-circle tubes are unsuitable, and also that Fuller's bivalve tube should never be used in recent cases. An ideal tube would be one which, having a movable collar, possesses a "cervical portion" (neck) just long enough to reach the trachea, and a "tracheal portion" (body) set on at such an angle with the cervical portion that the latter accurately follows the direction taken by the trachea itself on its way downwards to the lungs. The object of the movable collar is, of course, to permit the tube to follow the movements of the larynx and trachea in swallowing, etc., and so lessen the danger of ulceration from pressure or friction. In my "angular tube" these conditions are fairly fulfilled; and if an operator will have made and keep a good assortment of sizes, the requirements will be fully met.



The cervical portion of the cannula is that which lies in the neck of the wound; the depth will necessarily vary with the amount of swelling of the tissues in front of the trachea. In all cases there is some swelling after operation, while in a few cases it may be excessive; in one of my cases the nurse had to sit by the patient's side and hold in the tube, and even then it only just reached the trachea, so great was the inflammatory œdema of the neck. In the "tracheal portion" of the tube there is less need of variation; in all cases the tube should be as short as possible, as less effort is required to breathe through a short than through a long tube.

As regards this angular tube, I may say that it has been very generally approved, so far as its external shape is concerned. Criticisms upon it have been almost entirely directed to the inner tube, which has to be considerably cut away in order to allow it to pass through the angle of the outer tube. Certainly I must admit there is something in this contention, though I have not myself found therein any serious barrier to its successful use.

I attach less importance now than formerly to a double tube during the acuter stages of diphtheria, that is to say, during the first few days after tracheotomy; in many cases, in fact, an inner

tube may be quite discarded, provided the patient be in charge of a well-trained nurse, who understands how to use the feather and how to keep the tube clean. I might here add that I consider a good nurse almost as essential as a good tube. In former times, when very little attention was bestowed on the after-treatment and on the management and cleansing of the tube, an inner tube was an absolute necessity; by simply withdrawing the inner tube, the previous neglect during hours was in a measure instantly atoned for. A further advantage gained by dispensing with an inner tube is the greater breathing space thereby obtained—a matter of great importance and comfort to the patient.

The only tube which I think in any way approaches the "angular tube" in its general adaptability is the tube invented by Mr. Durham; but the mechanism of this tube is not without its drawbacks when used for young subjects. As adjusted for a shallow neck, a very considerable length of tube projects from the level of the neck, and for a young patient this is a practical drawback of no little importance. I have known the whole tube displaced from the trachea in a moment by a restless child, who was nearly suffocated in consequence.

There is one other tube about which I will here say a few words, namely, the so-called bivalve (Fuller's) tube. This tube was evidently invented for the purpose of facilitating the performance of tracheotomy at a period when the operation was considered complete the moment a tube could be got into the trachea. The outer tube only is "bivalve;" it is collapsible, and becomes wedge-shaped when the two halves are pressed together; the tube can thus be introduced with great ease, even into an insufficiently large opening; but this is a delusive advantage, for except the opening into the trachea be large enough, and except any membrane there may be inside the trachea be first got rid of in the manner described, there may be danger rather than safety in inserting the tube. I would most respectfully advise that the "bivalve tube" be entirely discontinued, and that the dilating forceps take its place at recent cases of tracheotomy.—*British Medical Journal, Sept.* 22, 1888, *p.* 655.

53.—ON THE SURGICAL TREATMENT OF EMPYEMA.

By Howard Marsh, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, London.

In a general sense empyema comes under the head of abscess, and, therefore, to determine its treatment it is necessary to consider what is the best treatment for abscess at the present day. Formerly large abscesses were left to burst spontaneously, because, if left to themselves, they pointed and evacuated their contents safely, and without either local or constitutional disturbance;

whereas, when they were opened, septic changes, increased suppuration, and hectic generally followed. But this practice of non-interference has by many been set aside. Means are now known by which septic changes can be prevented, and even very large abscesses can, with due care, be opened with impunity.

Another important advance has been the recognition of the fact that, although in some situations abscesses may exist for long periods without leading to any bad result, pus, even when it is "well-formed and healthy," is an injurious and destructive agent, for it leads to erosion and absorption of the neighbouring tissues; it burrows widely, and leads to the formation of long sinuous passages lined with degenerating pyogenic membrane; it sometimes makes its way into a large blood-vessel or into a joint; or, in the case of empyema, its presence is associated with the compression and binding down of the lung, and sometimes with ulceration of the pleura and necrosis of the ribs. On the two-fold grounds, therefore, (*a*) that there are grave dangers in leaving large collections of pus to burst spontaneously, and (*b*) that there are means by which pus can be safely removed, the practice with a large number of surgeons at the present day is to open abscesses as soon as they are detected. My belief is that, with further experience of the vastly improved results of interference, early evacuation will become the rule to which there will be but very few exceptions. There is a further argument in favour of letting matter out at once. It is that the mere presence of a collection of pus promotes suppuration. In common, no doubt, with many other surgeons, I have often met with cases in which, although before the abscess was opened it was enlarging at a rate which indicated that half an ounce of pus was being formed every day, after evacuation the quantity of pus discharged amounted to only a few drops, and soon entirely ceased. But the contention that, as an abscess, an empyema should be evacuated as soon as its presence is established is strengthened by the danger that the lung may become bound down. From this point of view every day is a matter of importance. Nor, in this connection, must other results be forgotten. The patient may be placed at a great disadvantage by the bursting of the abscess into the air passages; and a few weeks since a case was met with in which suppuration had extended through the diaphragm and produced fatal peritonitis. That there should be no delay when once pus has formed in the pleura, I should, speaking merely as a surgeon, think it advisable, if empyema were so much as suspected by the physician, to introduce a fine needle connected with an exhausting syringe, to ascertain whether matter could be reached.

Whether in the treatment of empyema the aspirator should be used is, I think, a doubtful point. I believe that, generally, it is better to make an incision, and establish free drainage. The as-

pirator may, no doubt, be successfully used, and after two or three, sometimes after a single aspiration, the formation of pus may cease. Yet, as a rule, it is necessary sooner or later to make a free opening; and it seems advisable, in order to give the lung an opportunity of expanding as soon as possible, to open and drain the pleural cavity at once. The cases in which the aspirator is most likely to be successful are those of recent empyema, but these are also the cases which do best under free incision and drainage. In cases of long standing, where pus is thick and flaky, and where the pleura is lined with a thick deposit of lymph, drainage through a free opening seems to be decidedly called for. As pus is often too thick to flow through the needle it is necessary, in any case in which aspiration is to be tried, to arrange beforehand that, if the tube becomes blocked, the means are ready for making a free incision.

If, as I think is best, an incision is determined upon, an important point is where this should be made. On this question, as well as on the general subject of empyema, the valuable lectures of Mr. Godlee (*Lancet*, vol. i., 1886) should be carefully studied. The main thing is to secure the best drainage of the cavity, and I agree with Mr. Godlee that this is obtained by making the opening in the eighth or ninth intercostal space just external (or anterior) to the angle of the scapula.

As Mr. Godlee points out, an opening at the lowest part of the chest where the cavity is soonest obliterated is less efficient for drainage than one placed higher up opposite the part of the empyema, which is the last to close. The opening is best effected by making an incision through the skin and muscles of the intercostal space, and by then thrusting a director into the pleural cavity and dilating the track thus secured by dressing forceps. No hemorrhage of any importance is likely to occur by this method. During the operation the patient should be under chloroform, and should be placed on the affected side and over the edge of the table, so that the action of the sound lung is not impeded. An important question is whether part of a rib should be removed in order to secure space for the introduction of a tube so that efficient drainage is established. In adults, in whom the intercostal spaces are wide, this need not, I think, be done. Nor is it always necessary in young children. I have notes of several cases in which the empyema closed completely in less than three weeks after simple incision. Yet the space between the ribs in children is often so narrow that a tube of sufficient size cannot be introduced. In such cases about three-quarters of an inch of the rib just below the incision should be removed. The operation can be performed very easily with cutting bone forceps. It is advisable, I think, to remove the periosteum also, for otherwise the reproduction of the rib takes place so quickly that drainage may become difficult. I

have never met with any hemorrhage that could not at once be arrested, for the wound is open, and any bleeding vessel can be readily found and tied.

Another point is whether the cavity of the empyema should be washed out with an antiseptic lotion. I agree with those who think this should not be done in ordinary cases. It is well known that the proceeding has been followed by serious symptoms; while in a large number of instances the washing out seems unnecessary, for the pus withdrawn is quite free from decomposition, and the cavity has remained aseptic throughout. But in cases in which the discharge is from the first, or subsequently becomes, fetid, irrigation is very advisable. I have used a 2 or 3 per cent. solution of boro-glyceride; boric acid lotion; and a solution of 1 part in 1,000 of tincture of iodine in water. The fluid used should be raised to a temperature of about 90°.

The prognosis, I believe, turns almost entirely on the duration of the empyema. In early cases—those within a month—recovery will, as a very general rule, take place. Sometimes it occurs very rapidly. In some instances the wound has, in children, entirely closed within a fortnight; but in cases of long standing the prospect is often very doubtful. The lung has become bound down; suppuration continues to be free; pus is apt to be retained, locked in by adhesions; the granulations covering the pleural surface become callous; not rarely there is necrosis of one or more of the ribs; while the general condition of the patient steadily deteriorates, and amyloid degeneration of the internal organ not rarely ensues.

In cases in which the empyema is chronic, and in which suppuration continues after a free opening has been made, Estlander's operation, consisting of the removal of a portion of two or more of the ribs, should be performed. This operation is certainly of great value for two purposes. In the first place, through the free opening which it provides the finger can be introduced, and any adhesions that are found to be obstructing the free escape of pus can be broken down, so that free drainage of the deeper parts of the pleural cavity is secured. This is a matter of great importance. Adhesions may form in such a way as to bar the exit of pus from some part of the sac, and till they are removed no progress towards healing will take place. In a case lately under treatment, in which the temperature remained high after part of a rib had been resected and a tube inserted, I resected another rib and introduced my finger, and encountering some adhesions, carefully broke them down. On doing so I found I had opened up an encysted collection of about an ounce of pus. After this the temperature fell to normal, and in about three weeks the secretion of matter had ceased, and the wound was soon soundly healed. In another instance, in a child, aged 5, in which no progress was being made, I found, on introducing the finger, that a sinus ran for some distance

in a direction upwards. This I dilated, and detected a collection of pus partially shut off from the rest of the pleural cavity, and lying nearly as high as the clavicle. The sinus was dilated, and the empyema subsequently closed. Secondly, Estlander's operation affords a method of dealing successfully with cases hitherto incurable, in which the lung is bound down and the chest wall is prevented, by the rigidity and close apposition of the ribs, from falling in and thus obliterating the cavity.—*British Medical Journal, Oct.* 13, 1888, *p.* 806.

54.—ON THE SURGICAL TREATMENT OF ABSCESS OF THE LUNG AND EMPYEMA.

By T. Pridgin Teale, F.R.S., F.R.C.S., Consulting Surgeon to the Leeds General Infirmary.

Although it is only within the last few years that the question of pulmonary surgery has come to the front, and has commanded a full share of the attention of physicians and surgeons, so much has been accomplished and attempted, that I must crave pardon if I fail, within the limits of this short paper, to give due credit to the pioneers in this excellent work.

My attention has been more especially drawn to this question by four cases recently under my care, in which suppuration occurred, and was discovered and treated, in the region of the base of the right lung. Two of these recovered after incision and drainage, the two others died. In two cases besides, in which abscess in the region of the diaphragm was suspected, I explored with the aspirator freely, the patients being under the influence of ether, but without success, no pus being detected. Both patients died within a few days, unrelieved. Five of these cases were attended in conjunction with Dr. Allbutt, and the sixth in conjunction with Dr. Eddison. I will give the points in the four cases in which pus was found, and will add two similar cases related to me.

Case 1, reported in *Lancet*, July 6, 1884.—Mr. B., 54, a patient of Mr. Ireland, of Tadcaster, began to be ill with pain about the colon, and transient obstruction of bowel. After some months of indefinite illness, dulness was discovered in the lower half of the right side of the thorax. As this was supposed to be pleural effusion, I was asked to tap the pleura. The first introduction of a fine trocar and cannula, aided by aspiration, brought away a few drachms of clear pleural fluid only. I therefore explored at another point, thrusting the trocar more deeply, and then drew off offensive thin pus, which did not flow readily through the cannula, but, by aid of aspiration, was drawn out to the extent of a pint. Ten days later the dulness was as great as ever, and the patient began to expectorate stinking pus. Under ether I first established the fact of the offensive pus, which I then expected to find in the

pleural cavity. On opening the pleura, a small quantity of serum escaped, and I could feel the lung close to the wall of the chest. Knowing that pus was present, I again thrust in the trocar, and, guided by the cannula, passed my finger into a large cavity in the lung filled with most offensive pus, into which a large drainage-tube was inserted. The patient was perfectly well in five months.

Case 2.—Mr. A., under the care of Dr. Johnson, of Kirkby Overblow, after suffering for many months from attacks of intense pain about the epigastrium, sometimes attended with peritonitis, had recently commenced to expectorate most offensive pus. Dr. Johnson, considering that there must be abscess of the lung, requested me to see the patient, with a view to exploration of the thorax. I found dulness of the lower half of the right side. The patient being under ether, a trocar was inserted about the posterior border of the axilla, and a pint of clear, sweet, pleural effusion was drawn off. No sign of abscess. As there was still much dulness about the anterior axillary border, the trocar was again introduced at the upper border of the eighth rib, five inches and a half from the nipple, and immediately stinking pus flowed out. Guided by the cannula, I opened the pleural cavity between the seventh and eighth ribs, and introduced my finger into the comparatively healthy pleural cavity whence the clear serum had been drawn. Then, to my surprise and dismay, I found that the cannula passed through the diaphragm into an abscess which lay beneath the diaphragm. After some consideration I enlarged the opening through the diaphragm, discovered that the abscess lay above the liver, the surface of which was smooth, and introduced a large drainage-tube. In the course of twenty-four hours his condition became extremely critical, in consequence of the rush of air into the thorax at each inspiration, which not only embarrassed the right lung, but interfered with due action of the left. By dint of perseverance and ingenuity Dr. Johnson succeeded in sealing up the incision in such a manner as to prevent the inrush of air without destroying the drainage, and so restored the mechanical power of inspiration. In 24 hours the danger had passed, the sound lung was working perfectly, and the patient was at ease. In three months all was well, and he was able to address a large assembly.

Case 3.—Mr. S., a patient of Dr. Ormsby, of Slaidburn, was suffering from symptoms of abscess of the upper part of the liver, and I was asked to explore. A trocar passed between the tenth and eleventh rib discovered pus. Following the course of the cannula I made a free incision, and, introducing the finger, discovered a large cavity bounded below by a ragged surface of the liver, from which three pints and a half of sweet pus escaped. Turning the finger upwards towards the diaphragm I discovered an opening through the diaphragm that would admit two fingers, evidently leading to the base of the pleural cavity. Unfortunately

I did not make a second opening between the ninth and tenth ribs, so as to give direct drainage to the cavity above the diaphragm, but contented myself with inserting one large drainage-tube into the hepatic cavity, and a second large tube upwards through the opening into the pleural diverticulum. For a week all went on very well, with a normal temperature and great relief. Then febrile and hectic symptoms returned, as if the pus were imperfectly escaping. At the end of six weeks I made a second opening between the ninth and tenth ribs, into a large cavity between the base of the lung and the diaphragm, which communicated with the hepatic abscess through the opening in the diaphragm. Relief from the second operation was but transitory, and he died at the end of two weeks from the second operation.

Case 4.—Mr. P., a patient of Mr. Carter, of Chapel Allerton, in the course of an illness began to expectorate fetid pus. There was dulness about the base of the right lung. A large collection of most offensive pus was found by incision between the ribs, and drainage was established. There was not the relief expected, and he sank at the end of a week. At the post-mortem examination the abscess was found to have burrowed behind the liver, and in the posterior mediastinum, and recovery under any circumstances of treatment seemed to have been out of the question.

To these cases of my own I may add two others which have been related to me by medical friends, both of which recovered.

Mr. R. N. Hartley, of Leeds, gives me particulars of the following case: A female, aged 27, suffered from acute pleuro-pneumonia, followed by very slow convalescence, with an uneven temperature, dulness at the base of the left lung, pain with orthopnœa, and then sudden expectoration of offensive pus. Puncture with a trocar between the seventh and eighth ribs, just in front of the angle, discovered pus. Guided by the cannula, he incised and exposed the lung, continued the incision through the lung until he reached and let out about a quart of stinking pus. The cavity was drained. In three days all urgent symptoms had gone and patient could lie down. She made a slow but uninterrupted recovery.

Dr. Davies, of Swainton, tells me the following case: A farmer, aged 21, in July, 1885, suffered from left pneumonia, and was laid up the following winter, expectorating pus. In the spring of 1886 the left lung was well, when the right lung fell amiss, with expectoration of pus, often in great quantities, even a quart at a time. This continued until June, 1887, when the expectoration became horribly fetid. In March, 1888, he became worse and seemed to be sinking. On April 1st Dr. Davies gave chloroform, made an incision into the thorax, and tapped the lung, letting out a quart of pus. The drainage-tube was removed on May 17th. On July 9th the patient had been for some weeks apparently well, the lung being fairly resonant.

If we look into some interesting papers published in *Guy's Hospital Reports* by Dr. Hilton Fagge in 1874, we shall find that abscesses such as I have described have been found not infrequently in the post-mortem room; and, reading these cases by the light of our recent experience, we shall be struck with the fact that the physician or surgeon, though face to face with evidence of a collection of fluid about the diaphragm, sometimes with evidence that that fluid was pus, failed to drive at the source of mischief, either withholding the exploring trocar altogether, or, puncturing and missing the mark, they still refrained from repeating the puncture, and so left the abscess to be detected only in the deadhouse. Certain points bearing upon the surgery of the chest seem to be unfolding themselves to our view.

1. We are losing our fear of exposing the pleura and the lung, just as we have learnt step by step how to deal boldly and safely with the peritoneum.

2. The evil of admission of air into the pleural cavity is not the mere exposure of the pleural surface to the air, is not that the lung collapses by the mere admission of the air, but that where there is a fairly healthy lung and pleura, the inrush of air reduces to a serious extent the mechanical power of the thoracic wall over the function of inspiration.

3. That in cases in which this mechanical difficulty threatens the life or impedes the recovery of the patient, surgery must decide upon the best method of closing the wound to the inrush of air whilst allowing adequate drainage of any pus cavity to be carried on.

4. That the region of the diaphragm is a situation in which abscess amenable to surgical treatment frequently occurs, such abscesses often commencing below the diaphragm, and tending to discharge through the diaphragm and through the lung.

5. It seems probable that such abscesses can be more safely attacked through the lower angle of the thorax, provided there be dulness at the seat of puncture, than through the abdominal wall.

6. As to washing out the cavity of a large pleural, or pulmonary, or hepatic abscess, it is probable that antiseptic washing is of value in the early period, whilst the cavity is offensive; but that, as soon as the secretion has become sweet, washing is not only unnecessary, but tends to disturb the comfort of the patient, and retard his progress. If drainage be effective, so that fluid does not lodge, the fluid, which is sweet when secreted, should escape from the cavity before it has time to deteriorate.

7. As to the question of excision of portions of rib in treating empyema, on this point I am unable to speak from personal experience. The tendency of surgical opinion seems to be rather to reserve it for special and exceptional cases than to make it a general rule of practice.—*British Med. Journal, Oct.* 13, 1888, *p.* 803.

55.—ON THE REMOVAL OF NASO-PHARYNGEAL TUMOURS.

By Thomas Annandale, F.R.C.S., Regius Professor of Clinical Surgery in Edinburgh University.

The principal object of this paper is to describe a method of operating which was successfully carried out in three cases of naso-pharyngeal tumour recently under my care. After a study of the several methods suggested and practised by Maune, Nélaton, Whateley, Maisonneuve, Langenbeck, Chassaignac, Ollier, Roux, Huguier, Cheever, Croft, and other surgeons, I believe that my procedure, although not original in some of its details, is in its entirety new. It is true that such growths have been reached through the palate by Nélaton and others, but not in the simple way presently to be described. As far as I am aware, my operations have demonstrated for the first time the fact that when the alveolar margin and palatal portions of the upper jaw have been divided along their centre from before backwards, and the bony septum of the nose cut through, the anterior nares having first been exposed by Rougé's plan, the two upper jaws can be separated to the extent of from half an inch to one inch, so as to give access to the posterior nares and base of the skull.

It is freely admitted that a naso-pharyngeal growth may be successfully removed by other "than a cutting operation, and there are a sufficient number of recorded cases to prove this; but there is a very general agreement that in the case of the majority of these tumours some cutting procedure is necessary in order to expose and obtain access to the site of their origin, so that they may be thoroughly removed, and also in order better to control the bleeding, which is often profuse during the separation of their attachments to the periosteum and bone. Naso-pharyngeal tumours have been removed by the cold snare, by the galvanic wire, cautery, or écraseur, by evulsion with forceps, by scraping with the sharp spoon, by ligature, and by means of electrolysis; but recent opinion would seem to favour the use of the cold snare or galvanic wire when the case is suitable for a non-cutting operation. Even with improved instruments the success of these two plans in completely removing the growth must be doubtful, owing to the difficulty of acting upon its connection to the bone, and I am therefore inclined to think that these two procedures might be made more certain if the site of the growth was first exposed by such an operation, as I suggest in this paper, so as to allow the wire to be accurately adjusted, and the tumour removed close to the bone. I have upon several occasions removed naso-pharyngeal tumours by evulsion with strong forceps passed through the anterior nares, the forceps being guided by two fingers of the left hand introduced through the mouth behind the soft palate; but the difficulty of separating completely the attachments of the

growths in this way, and the serious bleeding which accompanies the operation, have convinced me that, unless in the case of a small or narrow pedunculated growth, such a procedure is not advisable.

The steps of my operation are as follows:—1. The exposure of the anterior nares by freely dividing the mucous membrane connecting the upper lip and upper jaws, according to the plan of Rougé. 2. The division of the bony septum of the nose along its attachment to the jaw. 3. Incising the soft parts along the middle line of the hard palate, and then sawing through the alveolar margin of the upper jaw and through the entire hard palate along the same line. The soft palate may or may not require division in its middle line. The necessity for this depends upon the size and attachments of the growth. In one of my cases I did not divide it; in the other two I did. 4. The forcible separation of the two jaws, and the introduction through the gap of the finger, periosteal scraper, or other similar instrument, with the view of separating the *secondary* connections of the growth to surrounding parts. 5. The removal of the growth from its primary site of origin by forceps, sharp spoon, cold snare, or galvanic wire. In all my cases I used strong forceps, assisted by a periosteal elevator and a sharp spoon. 6. When the tumour has been removed, the introduction of some form of antiseptic plug. I generally use a plug of lint soaked in carbolic acid and well dusted with iodoform. 7. The jaws are now brought together again, and secured by one wire suture through the alveolar margin of the bone, and two or more horsehair sutures through the soft parts of the palate wound.

In all three cases (the narratives of which are here omitted) the patients were thoroughly anæsthetised, and during the operation the head was placed in a dependent position, resting over the edge of the operating table, as referred to by me in a paper in the *Lancet* of Nov. 8th, 1879. In one case, preliminary tracheotomy was required because the patient was unable to respire properly when lying upon his back, owing to the pressure of the tumour upon the larynx; but in the other two cases the operation was completed without any difficulty as regards the respiration or flow of blood into the air-passages. Although advocating this special method in cases which demand some cutting operation, I by no means condemn all other plans of procedure, for I believe with Sands that in cases of sarcoma, or in cases in which the attachments of the growth are extensive, the excision of the whole or of a portion of the upper jaw will give the best and most certain result.

In concluding these remarks, I would state what I consider to be the advantages of my method. (1) It is a simple procedure, and if the growth can be removed by its aid no deformity results.

(2) Should it be found that the growth cannot be properly exposed and removed in this way, the proceeding forms one usual stage of a more severe operation—namely, the removal of the upper jaw itself—and therefore it assists and does not interfere with further operative measures. (3) From my experience of operations for the removal of naso-pharyngeal growths, I have a strong opinion that the central section, as advised, is accompanied by less bleeding than most of the other cutting operations practised.—*Lancet, Jan.* 26, 1889, *p.* 162.

56.—ON THE EFFECTS OF NASAL STENOSIS.

By E. Cresswell Baber, M.B., Surgeon to the Brighton and Sussex Throat and Ear Dispensary.

The immediate effect of nasal stenosis, even if not complete, is that the mouth is held more or less open in order that respiration may take place through it. In consequence, the cold and unpurified air passing directly into the mouth causes irritation of the pharyngeal, laryngeal, and even bronchial mucous membrane. The breathing is often noisy, especially at night (when the patient snores, and at times "fights for his breath"), and during eating. Sleep may in consequence be impossible or disturbed, but not necessarily so, in my experience. The infant's nasal obstruction may have serious consequences on account of the impediment to sucking which it presents. According to Carmichael it also plays an important *rôle* in the production of collapse of the lungs. The physiognomy of an habitual mouth-breather is characteristic; the nose has a pinched aspect; its alæ are pressed against the septum and wasted, the folds between the nose and upper lip obliterated, and the inner canthi of the eyes drawn down. The face altogether assumes an elongated aspect, and has a dull listless expression. The effect of nasal stenosis on the speaking voice varies according to the situation of the obstruction, from the altered resonance due to closure of the anterior nares to the "complete deadness of speech" found when the naso-pharynx is obstructed, the latter consisting, according to Meyer, of two elements, inability to pronounce the nasal consonants M and N, and loss of resonance in the anterior and posterior nares. Impairment of the upper notes of the singing voice is present in nasal stenosis. According to Freudenthal stuttering may be produced by nasal obstruction due to adenoid vegetations. Two senses can mainly suffer in nasal stenosis, the olfactory and the auditory. Obstruction of the nasal cavities, according to whether it affects the front or the back part, impairs or does away with the sense of smell or of the taste of flavours. Impairment of hearing in nasal stenosis may be due either to an extension of the inflammatory condition of the nose up the Eustachian tubes, or to the interference with the proper ventilation of

the middle ear. With complete intranasal stenosis, at each act of deglutition Toynbee's experiment is performed, but it is astonishing in practice how little one finds deafness associated with even marked intranasal stenosis. Distinctly the most common form of obstruction associated with impaired hearing is that due to adenoid vegetations, and the reason appears to me to be that the full action of the dilator muscles of the tubes is mechanically interfered with by the growths, thus rendering a proper separation of the Eustachian walls at each act of deglutition impossible. This explains the immediate improvement in hearing often resulting from a removal of the growths. Certain observers attribute what are usually termed reflex nasal phenomena, such as asthma, to the mechanical effects of obstruction. I am not inclined to agree with them, but a passing notice is necessary as it will be interesting to have the opinion of members of the Section on this point. The effect of nasal stenosis on the thorax, to which attention was drawn some years ago by Loewenburg, and more recently by Chatellier, is most marked in adenoid vegetations. The theory is that the partial vacuum in the chest caused by the obstruction to the ingress of air into the lungs, either from involuntary mouth-closing or from interference of the velum during sleep, causes the ribs to be laterally compressed, and pigeon-breast to result. I saw a well-marked case recently in which the two conditions coexisted, but how often they bear the relation to each other of cause and effect is a question open for discussion. Freudenthal's recent observations on the effect of nasal stenosis in producing hernia are of interest. He examined the noses of 500 patients suffering from rupture, with the result that 143 were found affected with marked nasal obstruction. He attributes the hernia to the increased abdominal pressure due to the frequent and long-continued efforts on the part of the patient to get rid of the secretion from the obstructed nasal cavities. The point certainly deserves consideration. General ill-development of the nasal cavities and a high arched (V-shaped) palate are said by Chatellier to be the result of adenoid vegetations in childhood, and the excessive arching of the palate in its turn is considered to give rise to deflections of the septum. Without being able to speak positively from my own experience of the production of high palates from this cause, I think most of us will agree that undeveloped nasal cavities are often met with in neglected cases of adenoid vegetations. How far scoliosis of the septum is associated with these cases is a point on which it will be of value to hear the opinion of the Section. These few remarks will show that nasal stenosis produces serious and far-reaching effects, greatly in excess of what at first sight might appear.—*British Med. Journal, Sept.* 15, 1888, *p.* 601.

[See also articles on "Adenoid Disease of Naso-pharynx" and "Nasal Polypi," by Dr. Bader, in the *Synopsis* of this volume.]

57.—SELF-RETAINING PALATE RETRACTOR.—A RECENT IMPROVEMENT IN POSTERIOR RHINOSCOPY.

By E. Cresswell Baber, M.B., Surgeon to the Brighton and Sussex Throat and Ear Dispensary.

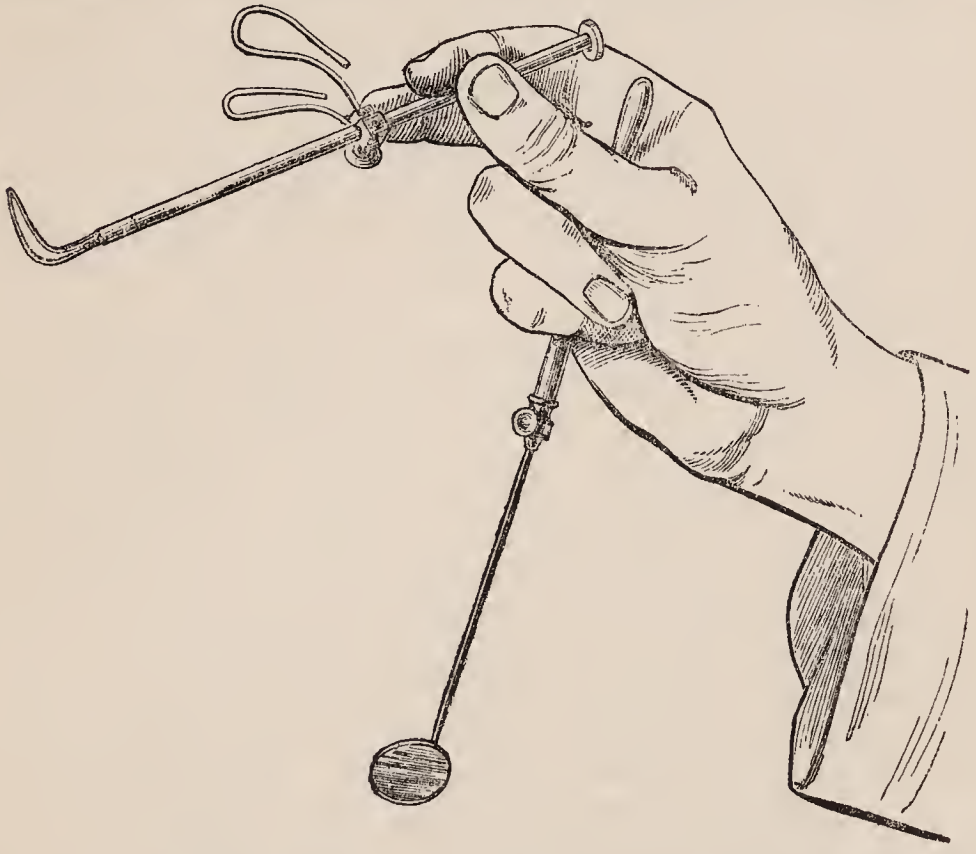
The importance in many cases of drawing forward the soft palate with a hook or other means, in order to obtain a thorough view of the naso-pharynx—especially of the posterior and superior walls of that cavity—is pretty generally acknowledged. A hook appears to be, on the whole, the simplest and most convenient instrument for the purpose, and Voltolini's hook acts satisfactorily now that we are able to have recourse to cocaine anæsthesia. Many like myself must, however, have felt the importance of having an instrument which, whilst capable of rapid application and removal without inconvenience to the patient, would at the same time hold itself in position, leaving at liberty both hands of the observer. These conditions appear to be fulfilled by the self-retaining palate retractor, invented by Dr. Joseph A. White, of Richmond, Va., and described by him in the *Journal of the American Medical Association* for February 18th, 1888.

Description.—Dr. White describes the instrument as "made of a square steel bar about 3 millimètres thick, terminating in a loop of pure silver wire, heavy enough to hold the palate, and light enough to be readily changed in shape by the fingers to suit each individual case. On the bar slides the attachment which clamps over the upper lip and holds the retractor in position. This sliding attachment with two arms requires no fixation to keep it in position, the tension being alone sufficient to make it immovable on the square bar. For greater security, however, in performing an operation a small fixation screw is attached to the side of the slide to fasten it securely, so that facial contortions should not displace it."

Dr. White at first sometimes used pads attached to the arms of the sliding attachment, but now he only uses silver loops, as they can be "moulded by the fingers to suit any case." In the instruments which I have employed (made by Down Brothers, London), I have made the little modification of leaving the loops open (as shown in the adjoining figure), as by this means the length of the loops can be varied at the operator's pleasure. In practice, however, it is convenient to have two sizes ready to suit different-sized upper jaws, for if too long loops be applied to a small jaw, the anterior end of the instrument will hang down inconveniently into the mouth. The smaller instrument is also made lighter and shorter in the stem.

Mode of Application.—Dr. White, in his short communication, does not give any directions for this. The mode in which I apply the instrument for an examination is as follows: The hook is held

in the right hand between the thumb and two first fingers in the manner shown in the accompanying woodcut (which I have had made from a photograph), a rhinoscopic mirror, which has been previously warmed, being grasped between the two last fingers and the palm. (A large mirror may often be employed, one having a diameter of three-quarters or seven-eighths of an inch.) The



tongue being held down by an angular depressor in the left hand, the hook is rapidly introduced well up behind the velum, which has been previously cocainised, and the clamp is pushed forward with the fingers of the right hand until the loops fix firmly in the depression on either side of the nose, where they remained without the use of the screw. My practice is always to apply the loops to the outer side of the alæ, but Dr. White sometimes catches them "in the nostrils." The heated mirror being ready in the right hand can then be immediately applied to view the naso-pharynx. Removal is accomplished by catching and drawing forwards the under part of the sliding attachment with the right index or middle finger. This loosens the hold of the attachment, and the hook drops out of itself. By adopting this plan the hook need only be kept in a very short time if a simple examination is all that is required. Cocainisation is usually necessary before applying the hook; indeed, it may be said that the introduction of cocaine has produced quite a revolution in the examination and treatment of these parts. I apply the cocaine by injecting a few drops of a 5

or 10 per cent. solution into either nasal cavity with a small syringe or medicine dropper, holding the patient's head at the same time well back so as to allow it to run over the velum. A few patients only tolerate the application of the hook without any cocaine. For a simple examination, which can be very rapidly executed in the manner already described, a 5 per cent. solution often suffices, but for a prolonged application and in very irritable throats a 10 per cent. solution is necessary, and the nasal injection may have to be supplemented by painting the posterior surface of the palate with the same solution by means of a curved brush introduced through the mouth. On one occasion, after applying a 10 per cent. solution through the nose and mouth of a boy, aged 13, I saw some temporary faintness, but, as this did not come on until after the removal with forceps of a large adenoid vegetation, it may have been due to the latter.

In applying the hook, it is desirable to draw forward the palate rapidly, disregarding any slight reflex action, which generally subsides of itself. Voltolini has pointed out that a firm pressure is much better borne than a light one, and it is evident that the pressure is much steadier and less likely to irritate with this hook than with one held in the hand. If reflex contraction of the palate is not thus overcome, a more thorough cocainisation must be employed, or attempts may be made to overcome it by directing the patient to "sniff," the hook being gradually tightened as the muscles yield. Those not accustomed to using a palate hook may be astonished at the power possessed by the palatal muscles, also at the extent to which the palate can be drawn forwards, and the very thorough manner in which the naso-pharynx can be inspected. Besides the greatly improved view gained of the vault and back wall of the naso-pharynx (pharyngeal tonsil and bursa), it is possible to see further into the posterior nares, on account of their appearing less foreshortened and better illuminated with the larger mirror.

I may say that Dr. White mentions one objection to the instrument, and that is, "that the bar may get in the way of operating in the right nostril; but this does not hold good if the operator is ambidextrous, and, moreover, it is so small that it is not much of an obstruction." From the patients' account, the application of the hook does not appear to be particularly inconvenient, certainly not more so than that of Voltolini's hook. I have several times applied it to children aged 13 or 14 years. It may in certain cases also obviate a resort to the much more disagreeable procedure of palpation of the naso-pharynx. During the last six months I have employed the hook in a large number of cases, and can recommend it as a valuable assistance in examining the naso-pharynx, and in carrying out operations in that cavity.—*British Medical Journal, Jan.* 12, 1889, *p.* 67.

58.—ON INGUINAL COLOTOMY FOR MALIGNANT DISEASE OF THE RECTUM.

By Harrison Cripps, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, London.

Colotomy must not be considered in any way as a rival operation to that of excision in cases of rectal cancer. In a large number of instances excision is quite impracticable, and it is in such cases that the question of colotomy arises. The advantages of the operation lie partly in the relief it affords to symptoms, partly as a means of retarding the growth of the cancer. The pain caused by the growth itself varies greatly, and is more influenced by the position than by any other factor. When the growth is near the anal margin the pain is often intense, whereas, when higher up the bowel, there is comparative immunity. Sooner or later the bowel becomes strictured, the symptoms of which are very characteristic, and often cause the greatest misery. The sufferer is troubled with constant calls to the closet, and generally believes that he is suffering from diarrhœa, and not infrequently has been told that his disease is chronic dysentery.

What is passed at such times is not a true motion, but rather a grumous mucoid discharge stained with blood and fæcal colouring matter. This discharge arises from an accumulation of scybalous masses in the dilated bowel above the stricture, and what comes away is merely the overflow from this mass mixed with blood and mucus. As time advances the trouble increases, the anus becomes raw and excoriated, and the patient is perpetually tormented with tenesmus. Purgatives and enemata gradually become useless, and the whole attention is fixed upon getting a proper evacuation. The abdomen gradually becomes swollen and tympanitic, and the patient dies from fæcal vomiting, or occasionally suddenly from perforation of the intestine.

Colotomy completely relieves all symptoms arising from the contracted state of the bowel, while it serves as a permanent safety valve against the risk of complete obstruction. The influence of the operation in retarding the growth is a debatable question. My own impression, founded upon considerable experience, is a strong one, that the progress of the growth becomes much slower after the bowel is set at rest by the operation. The return of strength and the gain of flesh are often well marked after colotomy, no doubt due to the increased appetite, the relief from pain, and the quiet nights following the operation.

To suppose that a patient after colotomy is in a miserable condition, with fæces constantly running away from the opening, is a delusion. If, as sometimes occurs, the opening is made too

small, or allowed unduly to contract, the advantage of the operation is, in great measure, lost, and constant dribbling occurs from the wound. If, however, care be taken to make the opening valvular and of sufficient size, a motion generally passes but once a day, and there is a fair amount of control over the new anus.

The time at which the operation should be performed is a matter of some importance. I advise it without delay in cases where symptoms of stricture are present. If deferred, not only does the patient lose the advantage of the operation, but it may have eventually to be performed for complete obstruction under most dangerous and unfavourable circumstances. Colotomy on an empty bowel, when the patient is not reduced to death's door by unrelieved suffering, involves but slight risk to life. Up to the present time I have been sufficiently fortunate out of a large number of cases of lumbar colotomy to lose but a single patient, and have had hitherto no fatal result from the inguinal operation. On the other hand, the death-rate following the operation when performed for complete obstruction on a distended bowel is as high as 30 or 40 per cent.

The colon may be opened either in the lumbar or inguinal region. Until recently the lumbar operation was universally selected in this country, but the improved knowledge of intra-peritoneal surgery has led surgeons to reconsider the inguinal method; and amongst those who have done much to reintroduce this operation must be mentioned Mr. H. Allingham. There are two considerable objections to the lumbar operation, both depending on the limited space in which the operator has to work. The first objection is the difficulty often found in certainly recognising the colon, and this difficulty has caused many good surgeons to fall into the error of opening the duodenum, or some other part of the small intestine, with disastrous results. The second objection lies in the variations or abnormalities occasionally occurring in the descending colon. Slight variations in the course of the bowel generally mean nothing worse than a somewhat prolonged search; but not infrequently the operator altogether fails to find the bowel. The cause of this failure, as pointed out by Mr. Lockwood, arises from the bowel taking a totally abnormal course, so that practically there is no descending colon on the left side. To send the patient back to bed unrelieved, with a deep and dangerous wound, is a most unfortunate circumstance, but one which, nevertheless, is sure to occur in a certain proportion of cases. It has never been my misfortune hitherto to operate upon a patient the subject of an abnormal colon, but on three occasions I have been present when the operation has failed from this cause.

Inguinal colotomy meets both of the objections referred to. Owing to there being plenty of space there is no difficulty in find-

ing the bowel; for, should it run an abnormal course, and not present itself when the peritoneum is opened, the operator has only to pass his finger down towards the pelvis and feel for the upper part of the rectum, when the bowel can be easily traced upwards, and a portion of the sigmoid flexure hooked out. Moreover, there can be no possibility of mistaking the small intestine for the large, the three longitudinal bands, together with the glandulæ epiploicæ, being so clearly marked and easily recognisable as to render a mistake impossible. From the operator's point of view there can, therefore, be no possible question of the superiority of the inguinal over the lumbar operation, especially if it can be shown that there is no disadvantage in the position of the outlet, nor that opening the abdominal cavity increases the risk to life.

Sufficient time has not elapsed to speak positively as to whether the opening in the groin gives rise to any special inconvenience not met with in the lumbar operation; but at present I have observed no disadvantage in this respect. As regards the risk of the operation, it is probably less than in lumbar colotomy. The bowel is found with ease and certainty; a clean incision can be made through the abdominal parietes without the bruising or damage of the sub-peritoneal fat so frequently unavoidable in Amussat's operation. The parts thus unite by first intention, with scarcely a trace of constitutional disturbance. Indeed, in the nine cases appended to this communication, which embrace my entire experience of the inguinal operation, none of them gave any anxiety whatever, all rapidly convalescing without an untoward symptom.

Unless a wider experience should disclose some danger or difficulty not yet observed, I believe that the inguinal operation will be that generally performed in the future, and that in a few years lumbar colotomy will be a mere matter of history. It is as a guide to those who have not yet had an opportunity of performing the inguinal operation that I venture to call attention to a few details I have found useful, together with a brief history of my cases.

Method of Operating.—Different surgeons vary considerably in their method of exposing and attaching the bowel to the surface. The following is the plan employed in my cases: The abdomen having been thoroughly well washed with soap and water, antiseptic treatment as regards sponges, instruments, hands, etc., is carried out. An incision two inches and three-quarters in length is made one inch and a quarter from the anterior superior spine, one-third of the incision being above and two-thirds below an imaginary line drawn from the anterior superior spine to the umbilicus. In making this incision the skin should be drawn a little inwards, so that the opening through the transversalis fascia

and the peritoneum is on a different level, when the skin is again relaxed, thus making the opening valvular, and rendering its subsequent closure with a pad easier. The peritoneum being reached, it is pinched up and a small opening made, which is subsequently enlarged to nearly the length of the cutaneous incision. The small intestine generally first presents, but, on pushing it back, the colon often shows itself; if it does not it can be readily found by passing the finger downwards into the pelvis, and following the rectum upwards till the sigmoid flexure is reached, which can be hooked out with the tip of the finger. With moderate care there can be no possibility of mistaking the small intestine for the colon. The three longitudinal bands are very conspicuous, which, together with the glandulæ epiploicæ and the regular convoluted surface, establishes unmistakably its identity; not infrequently, moreover, hard, scybalous masses can be felt within it. A loop of bowel being drawn into the wound, two provisional silk ligatures are passed through a portion of the peritoneal coat opposite the mesenteric attachment. These provisional ligatures, the ends of which are six inches long, help to steady the bowel during subsequent stitching to the skin, and eventually serve as guides when the bowel has to be opened. They should be two inches apart. The bowel is now temporarily returned into the cavity. The parietal peritoneum is then picked up with forceps, and attached to the skin on each side of the incision one inch and a half apart by a couple of sutures of fine silk. The bowel is again drawn out by means of the provisional ligatures, and fixed to the skin and peritoneum by six fine ligatures on each side. These sutures are best passed by fine partly curved needles, the needle passing first through the skin an eighth of an inch from the margin, then through the parietal layer of the peritoneum, and lastly through the peritoneal and muscular coat of the bowel, great care being taken to avoid perforation of its mucous membrane. It is easier to pass all the sutures before tying them up. The wound being perfectly cleaned by gentle sponging, the threads can all be tied with moderate tightness. A suture should now be passed through the skin at each end of the wound, including a portion of the peritoneal layer of the bowel.

The ligatures should be passed not far from the mesenteric attachment of the gut, so that about two-thirds of the circumference of the bowel is external to the wound. I regard it as waste of time stitching the parietal layer of the peritoneum all the way round to the skin before drawing out the bowel; the four stitches mentioned are all that are really necessary at first to fix it, for it is subsequently included in the ligatures attaching the bowel to the skin. A piece of green protective is put over the exposed bowel, and the whole covered with a firm antiseptic dressing. Unless the protective is used, it will be found that the lymph

thrown out from the bowel has attached the dressings with surprising firmness. I dress the case the next day to make sure that nothing has been displaced by vomiting, etc., the dressings being reapplied and kept on till the sixth day, when the bowel can be opened. By this time it is found firmly attached to the skin, and covered by a remarkably thick layer of organised lymph. In opening the bowel the provisional threads which have been left in afford a valuable guide. They are gently drawn upon, and the bowel opened between them with a sharp knife. The cut margins of the bowel can be pared off with scissors to the level of its attachment to the skin. No anæsthetic is necessary, the bowel being quite insensitive. The patient is convalescent in about three weeks. [Brief narratives of nine cases in which the operation was performed are appended to Mr. Cripps's paper, but, as they call for no special comment, they are not reproduced here.]—*British Med. Journal, Oct.* 6, 1888, *p.* 760.

59.—ON SIGMOID COLOTOMY AS A METHOD OF TREATMENT IN RECTAL CARCINOMA.

By Thomas F. Chavasse, Surg. to General Hospital, Birmingham.

Like the lumbar method, which in question of origin it preceded, and is, I believe, ultimately to supersede, sigmoid colotomy may be performed for the relief of rectal carcinoma under any of the following conditions. 1. When great pain exists during the act of defecation, or when urgent tenesmus is constant. 2. For obstruction due to narrowing of the calibre of the bowel by the growth of the neoplasm. 3. For the relief of recto-vesical or recto-vaginal fistulæ.

Method of Operation.—Whenever possible the proceeding is to be divided into two stages. The first and major step is undertaken with the view of securing the adhesion of the colon in the inguinal region and the shutting off of the general peritoneal cavity. The second consists in the opening of the adhering gut to allow of the escape of flatus and fæces. The operator's first care is that the skin of the whole abdomen shall be carefully cleansed with soap, a nail brush, and a carbolised solution. An incision two inches and a half long is made from below upwards, and one inch internal to the left anterior superior iliac spine, the middle of such incision to be opposite the anterior border of the spine. The skin, fascia, external oblique tendon, muscular wall of the abdomen, and transversalis fascia are divided in due order, and all bleeding vessels secured by pressure forceps as they become visible. The peritoneum is then raised with dissecting forceps, and a small opening, large enough to admit a director, made with a scalpel at a point about the middle of the incision. The two edges of this aperture are secured with pressure forceps, and it is then enlarged to the full

size of the external incision, either with a pair of scissors or a knife and a director. A small piece of flat warm sponge is next gently pushed into the opening so as to prevent any of the contents of the cavity prolapsing. The divided peritoneum is then stitched to the edges of the skin incision by four catgut sutures, two at the upper extremity (one on each side) and two at the lower. This answers two purposes. 1. It affords a fixed surface for the speedy adhesion of the bowel. 2. It prevents the access of any discharge from the muscular planes until the general peritoneal cavity has been securely shut off.

Having thus attached the parietal peritoneum, the sponge previously inserted is withdrawn, and the sigmoid flexure sought for. Frequently it appears at the external opening directly the left forefinger is introduced into the peritoneal cavity. If it fail to do so, an endeavour must be made to find it. Various ways have been suggested, but my own experience leads me to prefer the passing of the left forefinger upwards and slightly backwards in the direction of the left kidney; up to the present time, by this method, I have never failed almost immediately to find the portion of the gut sought for. Sufficient of it to fill the external incision, and to protrude an inch or more beyond it, is then drawn out of the abdominal cavity. There should be no difficulty in recognising the large intestine; the distinctly thick feel imparted to the thumb and fingers, the presence of the appendices epiploicæ, and of the longitudinal bands, will afford ample evidence.

The next step of the operation is to secure the gut that has been drawn out. The method of doing so will depend whether the malignant growth is causing complete obstruction or not. If so, then on each side three interrupted carbolised silk ligatures, passed through the peritoneal and muscular coats of the bowel, and secured to the edges of the parietal peritoneum and skin incisions, will suffice. Should the obstruction not be complete, it is better to attempt to form a "spur," which shall cause, when the second step of the operation has been completed, a division of the sigmoid flexure into distinct upper and lower openings, from the former of which only the fæces shall be evacuated. This can generally be readily accomplished, as shown by Mr. Herbert Allingham, by passing a carbolised silk ligature through the edge of the skin incision, half an inch from the lower end of the wound through the mesentery of the flexure, and back through the mesentery and skin, close to the point from which it started. A loop is thus formed, securing a portion of the mesentery, and the free ends are tied tightly. The intestine itself can be stitched to the skin as described before.

To conclude the operation, I always pass a thin piece of silver wire through the two outer coats, about the middle of the protruded bowel, in a longitudinal direction, the points of insertion

and exit being a quarter of an inch apart. This acts as a "guide" at the second stage of the operation. It is a small detail, but it will generally prove useful to the operator, as the condition of parts is visibly altered at the end of fifty or sixty hours. All the exposed surfaces are now carefully cleaned by a warm weak solution of corrosive sublimate, and a dressing of protective, corrosive sublimate wool, and a pad of wood wool applied and secured by a broad flannel belt. The one generally used here is broad enough to extend from the lower ribs to immediately below the iliac crests, not wide enough to meet in the middle line anteriorly by six or more inches, but secured by double folds of elastic webbing bandage (fifteen inches to make one fold), sewn to the free borders of the flannel; of such folds, three on one side and two on the other, at different levels, are sufficient. These are fastened by safety pins, and, as they stretch considerably, allow the bandage to be tightened or relaxed, as may be deemed expedient.

The after-treatment consists in starving the patient for twenty four hours. If the pain be very urgent, half-grain morphia suppositories may be cautiously administered, but, if possible, in operations connected with the peritoneal cavity it is as well to avoid the administration of opiates. Small quantities of warm water may be given by the mouth; ice should be reduced to a minimum, and milk and effervescing waters are better shunned. Some of the numerous meat essences and good beef-tea are the best forms of nourishment until the second step of the operation has been performed.

The opening of the intestine depends upon the condition of the patient. I have successfully completed the whole operation at one time, and also at the end of twelve and twenty-four hours, but what is preferred is a delay until the third day. Its performance is practically painless, so no anæsthetic is required. With a tenotome an incision one inch long is made into the walls of the protruded intestine by the side of the wire guide. Care must be exercised not to push the point of the knife too deeply; if there be any doubt, a small opening should be made by the side of the silver wire and a director inserted, the wound being enlarged upwards and downwards by means of a pair of scissors. This having been accomplished, it is as well to snip off with scissors nearly to the skin level the protruded portion of the bowel; the consequent bleeding is readily restrained, and the subsequent false anus is less bulging, more sightly, and more satisfactory to the patient. By the end of the first week all the silk sutures should have been removed.

Advantages of the Sigmoid Operation.—(1) It is readily performed. (2) The patient is readily able to attend to his or her own wants in connection with the false anus. (3) The patient is able to lie on his back without discomfort. (4) Four or five inches more of the colon are left for it to perform its duties. (5) Being nearer the seat of the

disease, the operator is able, if necessary, to ascertain the precise limits of the growth. As a matter of practical experience, I have always found that the opening in the sigmoid flexure has been sufficiently remote from the neoplasm as not to become implicated during life. Malignant disease of the flexure, except at its juncture with the rectum, is of rare occurrence. (6) The wound in the soft parts, being small and superficial, generally readily heals.

Disadvantages of the Operation.--(1) The peritoneum is laid open. This was a step greatly dreaded by a former generation of surgeons; but, although an exceedingly bad master, this serous membrane is a good servant if properly treated. When, therefore, you have to deal with the peritoneum bear in mind the following rules. *a.* All bleeding points are to be secured before the cavity is opened, and before it is finally closed. *b.* Leave it clean and dry. *c.* Apply no irritating antiseptic. *d.* Sponges and fingers to be aseptic and warm. *e.* Handle the contents as little and as gently as possible. *f.* Permit no other fingers than those of the operator inside the abdomen. In the majority of cases (seven or eight out of every ten) in which I have performed lumbar colotomy, or seen it performed by others, I am sure that the peritoneal cavity is inadvertently or designedly opened. The space behind it is so limited, the distribution of the membrane somewhat erratic, and the colon occasionally so difficult to find, especially when collapsed (although Mr. Lund's insufflator is of great assistance) that the operator can seldom be certain that an opening of uncertain dimensions has not been made. Doubtless, if it be done, the mischief is not very serious, and the drainage effected by the position of the wound is all that can be desired. I am aware that this view is not the generally accepted one; but possibly you know that my colleague, Mr. Bartleet, who has been surgeon to this hospital for twenty years, and has had a far larger experience of lumbar colotomy than I can claim, holds a somewhat similar opinion. It may be, then, that the main advantage claimed for the lumbar method is more theoretical than practical. (2) Tendency of false anus to contract. This is certainly more marked in inguinal than in lumbar colotomy; but, as a rule, the opening can be kept patent readily enough by the occasional insertion of an oiled finger, a rectal bougie, or a tallow candle. At the first stage of the operation, if the sigmoid flexure be drawn well out of the peritoneal cavity and secured in that position, it is probable that the subsequent tendency to contraction is diminished. Frequently, in the lumbar method, as time goes on, the bowel becomes more prolapsed and uncomfortably bulging. This is the inguinal operation I have never yet seen.

Results.—I have now performed sigmoid colotomy thirteen times for malignant disease of the rectum, and can say that no patient has died as the result of the operation. The most successful, as

regards duration of life, was a personal friend, aged thirty-eight. Inguinal colotomy was completely performed on Nov. 9th, 1884, and death took place on Feb. 12th, 1886; but it must be borne in mind that this gentleman's social position enabled him to command every attention with regard to diet, nursing, medical supervision, and other details which make life bearable under such circumstances. In hospital practice, unless the operation is performed very early in the disease, the duration of life is much shorter than this.

To sum up, if life is to be prolonged and rendered as comfortable as possible, sigmoid colotomy should be performed at an earlier stage of the disease than is now customary; that is, when defecation becomes painful or difficult. The operation should not be postponed until obstruction is complete. To render it most successful, divide it into two stages and pay every attention to small details. It is desirable so to operate that two distinct and separate openings are formed in the flexure, and all sources of irritation removed from the malignant neoplasm.—*Lancet, Jan.* 5, 1889, *p.* 6.

60.—THE DIAGNOSTIC VALUE OF "BALLOONING OF THE RECTUM" IN CASES OF STRICTURE OF THE BOWEL.

By Thomas Bryant, F.R.C.S., M.Ch., London.

To assert that the safe treatment of any disease must be based upon a correct diagnosis is a truism which needs no enforcement. Hence any aid which tends to make the diagnosis of a local affection more certain is always of value, and is sure, in professional circles, to be hailed with satisfaction.

It is with such a feeling as this that I now call attention to a condition of the rectum, which is frequently found associated with a stricture of the lower bowel, and which, when present, is of great diagnostic value. I have described this condition at the head of this note as a "ballooning of the rectum." When the stricture is quite low down, and readily within the reach of the surgeon's finger, this symptom does not exist, although its counterpart—a patulous condition of the anus—may possibly be present. When the stricture is higher up, and beyond the reach of the surgeon's touch, this ballooning of the rectum is often present, and when so it becomes a symptom of great value. The rectum in its normal condition is a collapsible tube, and when a surgeon introduces his finger through the sphincter into this tube, in its healthy state, he finds the walls of the bowel in contact, and these he has to separate to complete his examination. When a stricture of the rectum exists, this condition does not always hold, and the surgeon will often find, when his finger has passed the sphincters, that he has entered a cavity, the walls of which are expanded or "ballooned." In this cavity the surgeon will be able to move his finger freely, and the walls of the cavity will only be felt when

searched for. The extent of ballooning will be found to vary in every case. When this condition of bowel is met with, the surgeon will be justified in more than suspecting the presence of a stricture, for I have never found this ballooning of the rectum to be present under other conditions than that of stricture. In cases of obstruction, complicated with symptoms which suggest the possibility of a stricture being their cause, this ballooning of the bowel becomes, therefore, a symptom of some importance, and is one which should materially help towards the confirmation of the diagnosis of stricture. This observation holds good in all cases of obstruction in which the disease is beyond finger reach. I believe this condition of the lower bowel to be due, primarily, to the atrophy of its muscular coats, brought about by the arrest of all peristaltic action from above at the seat of stricture; and, secondarily, to the distension of the atrophied bowel by retained flatus. This state of the rectum seems to be in stricture of its upper segments what a patulous anus and the want of fæcal retention is in stricture of the lower segment. It is not met with in all cases of stricture, and particularly in those of rapid formation. It is, however, present as a rule in examples of chronic stricture, and should be looked upon as a characteristic symptom. So valuable has this fact been to me in my clinical work, that it has often enabled me to confirm a doubtful diagnosis, or to make one in cases where much doubt had previously existed, and consequently to carry out a line of treatment with confidence.—*Lancet, Jan.* 5.

61.—ON THE GENERAL PRINCIPLES OF THE OPERATIVE TREATMENT OF FISTULA IN ANO.

By Charles B. Kelsey, M.D., New York.

The general idea of the operation of cutting a fistula in ano is a very simple one. It is that a director should be introduced into the external orifice, brought out into the rectum through the internal opening, or at a point where its end approaches most nearly to the mucous membrane, then bent and brought out of the anus, and that the tissues upon it should be cut. This is the idea conveyed to the student by his lectures, and to the practitioner by his text-books on general surgery, and in many, perhaps the majority, of cases, this simple procedure will be curative; for many fistulæ are straight tracks running not very deeply into the tissues, and it is to them, and to them only, that the operation applies. But no practitioner will cut many fistulæ in this off-hand, routine way before meeting with a case in which such an operation will either prove a signal failure or will result in irreparable injury to the parts.

Perhaps the first lesson taught by an unexpected failure in effecting a cure by this operation is that a fistulous track is some-

thing to be followed by a careful dissection, and not a thing to be laid open by a single sweep of the knife along a director which has, by more or less force, been entered at one opening and made to pass out at the other; for by this course not only is the track often left in great part undivided, but the director is forced into healthy tissue and parts are needlessly sacrificed. Instead of this, the track should be followed step by step from its external opening along its whole course; and to do this the director need only be introduced a short distance at a time. By thus following carefully the course of the fistula, no unnecessary sacrifice is made of adjacent healthy tissue, and side-tracks or diverticula are recognised as they are met. This is much easier than to pick them out in the bottom of an extensive bleeding and irregular wound.

A word about the director. The one ordinarily used is too blunt at the end for fine work. It should be of steel, delicately made, and probe-pointed; silver is too flexible for ordinary work.

With regard to side-tracks, or branching diverticula, the rule is that all such should be dissected up exactly as the main track should be; but to this there are very important exceptions. The rule may perhaps be modified in this way. As many tracks should be divided as can be done without risk of incontinence of fæces in either sex, or of destruction of the perineum in women, or of too great injury for the reparative powers of the patient.

As a rule, both the sphincters in either sex may be divided once in the median line without danger of incontinence. It is better, however, to divide as little as possible. The inner should be left intact, if possible; the division should be straight across the muscular fibre and not slanting; and a double division of one, and especially of both sphincters, should not be resorted to as a primary operation. In women and phthisical patients there is more risk than in men otherwise healthy.

In these modifications of the rule of complete division, cases of tracks running upward along the bowel are not included, for these should be divided as are those nearer the anus. Here the supposed danger of hemorrhage often stops the operator with his work half completed; and one of these tracks will often heal spontaneously after the opening of the lower one into which it empties. But it is not safe to trust to this chance. These upward branches are of two distinct kinds. In one the track runs directly beneath the mucous membrane, and may be so found with the director; and in this there is little danger of hemorrhage in its division, for the blood-vessels are all beneath it. In the other variety the track runs deeper in the wall of the gut, under the muscular layers, perhaps even away from the rectal wall into the perirectal tissues. In such cases there is great danger of hemorrhage, and division may be more safely done with the elastic ligature or the enterotome.

The exceptions to this rule of complete division will be found

in three classes of cases—those of the horse-shoe variety, the recto-labial variety, and the old cases of extensive disease, where the whole anal and perineal regions are riddled with openings. In these cases all the ingenuity the operator possesses will be demanded to effect a cure without resulting incontinence.

Horse-shoe fistula has been defined differently by different writers. In a typical case it is a form of fistula in which there are one or more external openings on each side of the anus, and an inner opening in the rectum in the median line behind. But a horse-shoe fistula may have only one external opening, and yet the abscess which has caused it may almost entirely surround the gut. Nor need the internal orifice be in the median line, either behind or in front. The name applies better to the shape of the abscess which has resulted in fistula than to the location of the openings. In this form of disease the pus in its burrowing has extended from one side of the gut to the other, and the resulting fistula may be complete, incomplete, or of the blind internal variety. The internal opening may be at any point, and the external may be on the opposite side of the body from it. In these cases I think it will generally be observed that the openings do not lead into distinct fistulous tracks of any great extent, but rather into one abscess cavity of considerable size.

It is evident that in operating upon such cases as these there is a chance for much skill in effecting a cure at one operation, and still preserving the sphincteric power. And I may say that a patient who has been left with incontinence of fæces after this operation is apt to be very unforgiving, especially when it happens to be a lady who has been rendered loathsome to herself, afraid to trust herself in society, and doomed to the constant wearing of a napkin. I have seen several such, and by means to be referred to have relieved some, but from the ill-fortune of others I have come to warn my own patients that incontinence may possibly result, when I see any reason to anticipate such a conclusion.

Taking now a case of horse-shoe fistula, the ordinary operation would consist in two complete divisions of the sphincters on opposite sides, probably resulting in incontinence. The correct method, as is shown by Goodsall, consists in one complete posterior division, and then the opening of the lateral tracks into this posterior cut. This principle may be made to cover nearly all of this class of cases. Where several external openings are grouped around the anus they may all be connected by one incision, and from this incision a probe may be passed through the internal opening, and this, too, divided with the sphincter. In case the external opening be at a considerable distance from the anus, and on the opposite side of the body from the internal, the method is essentially the same, the thing to be avoided being a slanting cut through the rectum and healthy tissue. By following the ordinary rule in

such a case—passing a director into one opening and out of the other and cutting upon it—all but a small portion of the lower end of the bowel would be completely severed by a deep incision.

It may easily occur that in a complicated case it is found impossible to divide all of the tracks without a double or even triple division of the muscles. In such cases the safer practice is to do such an operation as has been indicated upon all the tracks that can be included in a single division of the muscle, and to trust to other means of cure for the balance, at least till the first wound has healed. The most reliable of these other means is the injection of strong tincture of iodine into the uncut tracks. Many of them will have been thoroughly drained by the first incisions, and will heal with the additional stimulus of this treatment. They may even be thoroughly cauterised with fused nitrate of silver at the time of the operation.—*N. Y. Medical Record, Feb.* 16, *p.* 169.

62.—ON THE BLIND INTERNAL FISTULA-IN-ANO.

By Charles B. Kelsey, M.D.. New York.

The blind internal fistula is the one which, more than all others, leads to mistakes in diagnosis. The absence of any external orifice misleads the superficial examiner at the beginning, and the failure to make a thorough examination completes the error. There are two signs of this condition which will in every case lead to a correct diagnosis. The one is the discovery of the internal orifice, the other, the induration which invariably attends a track of any size. Again, there is something significant in the history, and I have learned by experience, when a patient gives all the usual symptoms of fissure, and yet has no fissure, to examine, under ether, for a blind internal fistula. I say examine *under ether* advisedly, for a complete examination without ether and a large-bladed speculum is an impossibility. Often a careful search over the lower three inches of mucous membrane will reveal a small ulcerated opening, and a probe passed into this will run for an inch or so under the mucous membrane. In other cases the finger will first detect an indurated spot or track, and a careful examination of this will show the opening of the fistula. In the submucous variety there is little or no induration, while in the submuscular the induration is likely to be distinct.

This variety of fistula is not, in my experience, very uncommon. It may arise from an abscess which has pointed into the rectum and not on the skin, or it may be due to an inflammatory or ulcerative process commencing in the rectal wall and resulting in perforation, such as tubercular disease. It is sometimes caused by inflammation of an internal hemorrhoid, and I have seen several cases directly and unmistakably due to the injection of carbolic acid into hemorrhoids. The acid not infrequently sets up a cir-

cumscribed inflammation, which results in a small abscess breaking on the mucous surface, and burrowing under the mucous membrane, if it has been deposited directly under the surface; or under the muscular coat, if it has been more deeply placed. These fistulæ are generally not very extensive, the track being an inch or so long and generally single, unless more than one injection has been followed by the same result. In a feeble patient with phthisis and relaxed fibre I have seen the mucous membrane undermined in almost every direction as a result of a course of treatment with injections of thirty-three per cent. acid; and in a patient of different fibre I have seen a large abscess of the ischio-rectal fossa, with brawny swelling of the buttock, bursting high up in the rectum, follow an injection of the pure acid.

The larger the abscess and the larger the opening into the rectum —it is sometimes so large that the end of the finger will pass into it—the easier the diagnosis. It is only the lesser forms of the disease that are liable to be overlooked, and yet even the lesser ones may render a patient's life very miserable.

There are two other points in the diagnosis of this affection that may be useful. One is, that the internal orifice when small may sometimes be detected by gentle pressure on the adjacent parts which shall force a drop of clear pus out of it; the other is, that in cases of circumscribed ulcer which refuse to heal under treatment, a blind track leading from the base of the ulcer should always be carefully searched for.

The treatment is simple in theory, but sometimes difficult to carry out. Large abscesses of the superior pelvi-rectal space which have opened into the rectum should be treated by the introduction of drainage-tube, and daily washing out with boracic acid solution. Those located in the ischio-rectal fossa should be opened on the skin, thoroughly cleaned out, and treated by drainage and injections to give the internal opening a chance to close without dividing the tissue between the two openings, which is often considerable. Should this fail, the ordinary operation may be done. In the lesser cases of small tracks without abscess cavity the track must be laid open. The rule is to enter a director at the opening into the bowel, bend it so as to follow the track, and then lay the latter open by cutting. When the track runs upward, this is not difficult, but when it runs toward the skin, and both opening and track are small, it is a very difficult and uncertain proceeding. Where the induration approaches near enough to the surface to be easily felt, I have in some cases cut directly down upon this through the skin without any director, and have then found no difficulty in passing a director onward through the internal opening. If, however, there is no friendly induration to guide the knife, the track must be carefully dissected out from the internal opening. It is easy under these circumstances to make a

false passage with the director, and thus lose the true one, and fail, in spite of free cutting, to cure the case.—*N. Y. Med. Record, Feb.* 16.

63.—ON THE TREATMENT OF PILES BY INJECTION.

By F. Swinford Edwards, F.R.C.S., Surgeon to West London Hospital; and to Out-Patients at St. Peter's Hospital.

So-called quacks, both in this country and in others, have been in the habit of using various injections for the cure of piles, advertising their method as being one which cured without the use of the knife, an instrument the public is unduly afraid of. I was led to test this treatment from the accounts given me by several American surgeons who have from time to time attended the practice at St. Mark's Hospital for Fistula. They confirmed what I had already heard, that Kelsey, of NewYork, a well-known rectal specialist, treats a large number of hemorrhoidal cases by the injection of carbolic acid, and this with brilliant results. There can be no doubt that if by this method the pain and confinement attendant upon an operation, whether by ligature, clamp and cautery, crushing, or excision, can be obviated, an immense boon is conferred upon the patient.

Now, amongst the out-patients at St. Mark's, and including two or three private patients, I have tried this method in thirty-eight cases, and I may say at once that I have been agreeably surprised with the results. It is now over two years since I commenced, and up to the present time I have only met with one relapse, whereas three cases have remained well for nearly two years, and fourteen others for periods varying between this and six months. In nine cases there are no symptoms remaining, such as hemorrhage, pain, or prolapsus; but sufficient time has not elapsed for me to discharge them as cured. I have lost sight of two, and ten are still under treatment, but all of these are improving. Excluding, then, the two cases which did not attend again after the first injection, all have been either cured (for a time, at all events), or are in a fair way to attain this end, with the exception of the case I have mentioned as having relapsed; but, indeed, this patient never gave the treatment a fair trial. He was a clerk in the City, and had been troubled with prolapse and bleeding at stool for seven years. After the administration of an enema, four large and well-developed piles were to be seen; and so large were they that I urged him to have them tied, but for this the patient had no time. In fact it was a question of the loss of his berth if he were obliged to lie up. Accordingly I injected about two minims and a half of a carbolic solution, 1 in 10, into each pile, and returned them. There was a little bleeding, but no pain. This was on May 5th, 1887. On July 1st he wrote: "I have felt no pain whatever, and until to-night I have seen no blood and now

it is very slight." I did not see him again, but on November 11th, six months after the injection, he wrote to say he was quite well. It is but fair to say that he was taking a mixture of iron and magnesia, and using an ointment of the persulphate of iron. A few days ago he wrote to say that his piles troubled him somewhat and came down at stool. The only wonder to me is that he should have had so long a respite.

In one case only was any, or perhaps I should say much, pain complained of. The subject was a young man who, on my passing the needle into the first pile, jumped off the couch as if he had been shot. It was lucky that he did not break off the needle of the syringe. As he had not sufficient control over himself, I did not tempt providence a second time, but admitted him into the hospital, where he underwent the usual operation of ligature. Our house-surgeon told me that he was very nervous and sensitive, complaining of more pain than his fellow patients.

The ages of my patients ranged between 21 and 68, and they were all men, from the fact, I presume, that during the time I have been trying this method I have been in charge of the male out-patients at St. Mark's. In only one case had I to repeat the injections four times. One or two injections, as a rule, sufficed.

As to the Method Employed.—Various fluids have been used, as carbolic acid, perchloride of iron, sulphate of iron, and ergot. I have confined myself to the first named, using this formula: carbolic acid gr. xij; glycerine and water of each ℥j, or 1 in 10, though in severe cases I have increased the strength to 1 in 5. If the piles are not down, that is, visible on separating the buttocks, an enema should be given: then, when the patient has strained his piles down as much as possible, he is placed on a couch on his elbows and knees. A hypodermic syringe, with a needle of good lumen, having been filled with the solution, an injection is made into the centre of each pile in turn of from two to five minims, and this should be done slowly, in order to give time for the fluid to diffuse itself. The piles having been oiled, should then be at once returned, and the patient may be allowed to depart. I advise him not to have an action of the bowels for twenty-four hours, and caution him to return the piles at once should they perchance become prolapsed. A mixture of sulphate of iron, dilute sulphuric acid, sulphate of magnesia, and infusion of quassia, three times a day, is prescribed, with an ointment of the subsulphate of iron to be passed up the bowel before and after stool. As a rule, I do not see the patient again for a week, when the report is usually satisfactory, that is, bleeding and prolapse have lessened or disappeared. A fortnight or more should be allowed to elapse between each injection; at least, I have not found the necessity of repeating it at a shorter interval. Of course, it is only of internal hemorrhoids we are speaking. It seems to me that every variety of these may be

treated by this method, though not so advantageously should the pile be much indurated, or have become semicuticular. It is obvious that sloughing and prolapsed hemorrhoids, which are irreducible, are beyond the reach of this remedy.

There are certain cautions which it is as well to bear in mind. In the first place, make a thorough examination of the rectum to see that no other disease coexists, as for instance polypus, fissure, fistula, and stricture, either carcinomatous or fibrous; the latter I have known more than once to have escaped recognition, whilst the piles alone were treated. Before operating, see that the bowel is empty, and that the piles are well protruded. If the patient is unable to force them out with the help of an enema, I hardly think it worth while attempting this method, for careful constitutional and local treatment is usually sufficient, though it is recommended that the hemorrhoids be injected through a speculum. Take care that the needle be inserted into the centre of each pile, or it is said that sloughing of the mucous membrane may be caused. After the injection swelling of the pile rapidly occurs, and if it is left long outside the sphincter there may be a good deal of difficulty in returning it. A digital examination after a week or so will discover slightly indurated swellings, corresponding to the tumours which have been injected. No doubt inflammatory thickening, with some thrombosis, is produced, which in time undergoes shrinkage, until at last an examination fails to discover anything abnormal.

There is a point one cannot lay too much stress upon, and that is to impress upon the patient the necessity of returning the part at once whenever it comes down. From the neglect of this one of my patients suffered great and unnecessary pain for three days, during which time the piles, which had become extruded, remained outside the sphincter.

The advantages of this method must be apparent to all, for the patient is not laid up, suffers practically no pain, and runs no risk to life from hemorrhage, tetanus, erysipelas, or pyæmia, though I may here mention that Mr. Cripps tells me that in some twenty cases one of his injections was followed by abscess. The patient commences to get better at once after the first injection, and is able to attend to his usual occupation during the whole course of treatment. Contrast this with any of the recognised operations. Although many of them are excellent, they necessitate the administration of an anæsthetic—at least, it is the usual thing, though it is possible to operate painlessly under cocaine, witness a case I reported some two or three years ago. Then a week in bed, and a subsequent week or two on the sofa, is generally required; in fact, it is usually three weeks or a month before the patient is fit for work again, although I am aware that some men have gone to work with the ligatures still *in situ*.

As to the strength of the solution, it will be seen that I have employed comparatively weak ones, for Kelsey recommends 15 to 20 per cent. solutions, and even the pure acid; but then he only injects one hemorrhoid at a sitting, which takes place weekly. Ball, in his recent work on the Rectum, says that Dr. Mathews, of Louisville, declares this method to be painful, insufficient, and liable to cause death by peritonitis, embolism, and pyæmia. All I can answer is that, in these thirty-eight cases, extending over the past two years, I have been fortunate enough to meet with none of these things. I admit that the number of cases I have brought forward is but limited, probably not sufficient to allow one to form a definite opinion; however, I trust that I may be as free from accident in subsequent cases as in those I have already had. My colleague, Mr. Allingham, in the fourth edition of his work, throws cold water on the method, for he says he has "tried the plan in a few cases, but the result was much pain, more inflammation than was desirable, a lengthy treatment, and the result doubtful—certainly not a radical cure."

Only once have I met with anything deserving the name of pain; as a rule the prick of the needle only is felt. Excess of inflammation I have not seen. As to radical cure, it seems to me that many years must yet elapse before we can judge of that. As I have pointed out, three of my cases operated on two years ago are, I have reason to believe, still well.

It is only right that it should be known that the chief advocate of this method, Kelsey himself, is no longer so enamoured of it as he once was, when he had had a series of 200 successful cases. It appears that he has published a pamphlet, which I am sorry I have not been able to see, in which, having had some unsuccessful cases, he now recommends the operation (if such it can be called) in certain selected cases only.—*British Med. Jour., Oct.* 13.

64.—ON THE TREATMENT OF PILES BY LIGATURE.

By Joseph M. Mathews, M.D., Prof. of Surgery, Kentucky School of Medicine, Louisville, U.S.

Certainly, of all known methods of treatment the ligature stands preëminent as an operation for internal hemorrhoids. It has stood the test of years in the hands of the most eminent surgeons. To-day it is the most popular method. Easy of execution, free of danger, and rapid in its results, it can but command the attention of all who are interested in this operation. To the principle involved in the use of the ligature all are agreed, but the method of application is to a certain degree disputed. The method, as practised by Mr. Allingham, is to dissect the hemorrhoidal tumor away from its attachments, and then to surround the remainder, at its base, with a tight silk ligature. For the

first few years in special practice I did the operation after this plan. I then modified it for the following reasons: 1. It was misleading to teach students after this fashion, because there was much danger in their dividing the artery which supplied the tumor. 2. There was more cutting than is necessary.

The modification consisted in running a delicate knife around the base of the pile, simply going through the integument. This saves any deep cut, and at the same time removes all superfluous skin, or external piles. Indeed, there are many cases of internal hemorrhoids which require no cutting at all. This point is not sufficiently brought out in the books. I allude to the large internal piles which have no complication as mentioned here, viz.: superfluous flesh, or external piles. These require only to be brought in sight, ligated and returned into the bowel. Much stress is laid upon the degree of tightness that should be accorded the ligature; some saying apply it loosely, others advising it to be drawn tightly. I am sure that the tighter a ligature is drawn the quicker and more effectual will be the cure. A point is made in suggesting the kind of material to be used in the ligature. Many prefer silk. I am in the habit of using the stoutest linen thread, such as is used by saddlers or shoemakers. The twist of the silk, or other material, I am sure has nothing to do with it, as some seem to think it has. The kind of knot to be tied is spoken of, Mr. Allingham remarking that he ties the knot *three* times. Twice is quite sufficient, and the surgical knot has no advantages over the common hard knot. All internal piles existing should be ligated at the same sitting, and all returned into the rectum. The greatest care should be taken in cutting off the tumors after ligating. It is much best to leave the whole mass, rather than to have one ligature slip after returning the tumors into the bowel. The presence of the mass in the gut cannot result in any harm; the ligature is between it and the circulation. As a rule, then, it should not be cut off. A number who have written upon this subject say that the bowels should be confined for from five to seven days, and a light liquid diet enjoined. Certainly this is a mistake, for two reasons: 1. In this length of time the fæces will become hardened and impacted. 2. These patients generally require all the nourishment they can get. When following this advice I have had as much or more trouble result from impaction than from the original operation. My habit is to purge the patient the day of the operation, and to give an aperient on the second day after the operation, and each succeeding day thereafter until the patient is discharged. Consequently a full diet is prescribed if required. When operating under an anæsthetic, I always divulse the sphincters, more especially if any cutting is done. This prevents the contracting of the muscles, hence obviates much pain when inflamed.

I have operated about one thousand times for hemorrhoids by the ligature. I have never had to operate the second time upon the same patient for the affection. Have never had an unnatural contraction around the anus as the result of the operation, nor had ulceration or stricture to result. I have had in this time one case of tetanus, which I believe to have been superinduced by a debauch, the patient having been drunk for several days before the operation. The tumors protruded, strangulated and mortified, hence the operation. He recovered from the tetanus under the bromide treatment. Have had one case of secondary hemorrhage occurring on the third day. The rectum was plugged and the bleeding stopped. Also one dangerous case of hemorrhage, which occurred one hour after operation was done, in consequence of the slipping of the ligature, the pile having been cut off. The patient was pulseless and cold when seen, but the artery was quickly secured and tied, and he made a good recovery. I have never had a single death result from the operation, and but few untoward symptoms.—*Jour. American Med. Assoc., Dec.* 1, *p.* 768.

65.—ON HERNIA OF THE SUB-PERITONEAL FAT.

By James Hardie, F.R.C.S., Surgeon Manchester Royal Infirmary.

In July of the present year, I was asked to see a gentleman about 35 years of age, who gave the following history. He was travelling by rail when a collision occurred, by which the head of a passenger sitting opposite him was pitched against his abdomen. He was otherwise slightly injured, and had to remain in bed for a considerable time. After two or three weeks, however, he only complained of symptoms referable to a small swelling in the epigastrium, and it was mainly on account of this that my opinion was desired.

On examination, I found a swelling nearly midway between the ensiform cartilage and the umbilicus, and slightly to the left of the middle line. It was circular in outline, barely two inches in diameter, and flattish, so that it scarcely projected beyond the general surface. The patient complained much of pain when it was touched, but it appeared, from such manipulation as it was possible to make, to be loosely connected with the subcutaneous tissues, and of doughy consistence, and a semblance of an aperture could be indistinctly made out in the abdominal wall on pressing the tip of the finger into the centre of the swelling. There was no impulse on coughing, and no diminution of its size could be effected. The patient averred that the swelling gave him so much pain, under various circumstances, when he was in the erect posture, that he was forced to remain in bed. I had an opportunity of seeing him about two months afterwards, and found the swelling in the same condition as before. The patient had by that time

begun to take a little exercise, but he described the painful symptoms as but slightly ameliorated.

The opinion I gave of the case was that the sudden thrust of the head of the fellow-passenger against the abdomen, together, possibly, with a sudden protective contraction of the recti muscles, had produced a slight aperture in the linea alba, and that an omental hernia had been the result. I was not satisfied with this diagnosis, however, inasmuch as the swelling scarcely felt like omentum, nor was it so freely movable in its bed as I should have expected an ordinary omental hernia to be. I advised, as a perfectly safe, and probably satisfactory operation, that the swelling should be cut down upon, as for the radical cure of a ventral hernia. To this, however, the patient would not agree.

By a singular coincidence, such as one so frequently meets with in practice, I saw, the week following my first visit to the above patient, two men in the workhouse infirmary, with swellings almost precisely the same as that I have described. The following are the notes of these cases :—W. T., æt. 44, a slater's labourer, admitted July 20th, 1888. He complained of a small swelling in the epigastrium, situated $2\frac{1}{2}$ inches below the ensiform cartilage, and $3\frac{1}{2}$ inches above the umbilicus. He thought it might have been produced by a fall eleven years previously, though he had only been aware of its existence for four years. When he first observed it, it was the same size as it is now, and he has never known it to vary in the slightest degree. He wishes it removed, though he cannot say that it is troublesome. For two days after admission, he says, he had a little pain in it. The swelling is about the size of a half-crown, only slightly prominent, solid, softish to the touch, non-reducible, and not well-defined in outline. It has no impulse on coughing, and though some resonance is obtained on percussion, it was thought that this was from the deeper parts. The diagnosis was a ventral omental hernia.

Operation, July 24th.—The swelling was exposed by a longitudinal incision. It consisted of ordinary fat, unlike the little masses of fat, compressed and indurated, and intermixed with fibrous tissue, which are usually seen in omental herniæ. It was not invested by any structure, like a peritoneal sac, but lay, apparently, in compressed cellular tissue, to which it was slightly adherent, and from which it was easily separated by the handle of the knife. There was an aperture in the abdominal wall about the size of a No. 12 catheter, to which it was closely adherent. A ligature was placed round its neck, and the distal portion having been cut off, the stump was separated from the edge of the opening, and the latter was brought together by three catgut sutures. Primary union took place, and the patient was discharged a fortnight afterwards.

J. B., æt. 53, a collier's labourer, admitted July 17th, 1888.

He complained of a swelling which is situated midway between the ensiform cartilage and the umbilicus, just to the right of the middle line. He was lifting a heavy weight nearly five years ago, when he strained himself, and had to lie down for an hour on account of a pain in the region where the tumour is now situated. He did not observe any swelling, however, until the following day, and it then appeared about the size of a hen's egg. It remained about this size for two or three weeks, and then gradually subsided to its present condition. For the most part it has been painless, though, five weeks ago, it gave him some trouble while using a spade. The tumour is slightly larger than that in the previous case, but with this exception, the same description may serve for both. It was operated on immediately after the other, on the diagnosis of omental hernia, and a precisely similar condition was met with on exposure. The attention of the two house surgeons, who were assisting, was drawn to the absence of any true sac. The pedicle having been ligatured, and its stump separated from the margin of the aperture, the latter was closed by three sutures. It was nearly the same size as the other. Primary union took place, and the patient was discharged a fortnight after.

Remarks.—I have no doubt that the first of these three cases is of the same nature as the two latter, and although provisionally diagnosing all of them as ventral omental herniæ, I felt that they presented different characters from those of other ventral omental herniæ which I have seen. I do not recollect that I have previously met with a case like them, and it is a singular circumstance that three should have fallen to me within a few days. The exposure of the parts by operation partly explained this peculiarity, namely, the absence of a peritoneal sac, but although remarking at the time the appearance of the fat, I did not until afterwards appreciate properly its origin. Mr. John Wood, in his essay on hernia, in Ashhurst's "Encyclopædia of Surgery," refers to the small foramina in the abdominal wall, which give passage to the terminal branches of the intercostal arteries, as sometimes enlarging so as to allow the escape of subperitoneal fat. I have not, however, found any account of such an occurrence which has merited the name of "hernia." It may be new to many to know that there exists subperitoneal fat in this region, and I confess that I was myself unaware of the fact until I made an examination of several bodies, with a view to obtaining an explanation of the anatomy of these cases. I have found patches of fat, of variable size, lying behind the linea alba, and it is quite conceivable that this fat may protrude through normal apertures which have become accidentally enlarged. There can be little doubt that in each case a blow or a sudden muscular contraction caused a small rent in the fibrous structure of the linea alba, through which the hernial protrusion occurred.—*Medical Chronicle, Nov.* 1888, *p.* 105.

66.—THE BIDET OR COLD DOUCHE IN AFFECTIONS OF THE LOWER BOWEL AND GENITO-URINARY SYSTEM.

By J. William White, M.D., Assistant Surgeon to the University Hospital, Pennsylvania.

I desire to call the attention of the profession to a method of treatment which, although not altogether new, is yet not appreciated as, in my judgment, it should be. I refer to a moderately forcible stream of water of varying temperature in the treatment of a number of affections of the rectum, anus, and genito-urinary apparatus. The atonic and astringent effect of such a stream of water upon any living tissue is, of course, a well-understood fact, and has been employed in the arrest of hemorrhage, in the treatment of inflammation, and in various other conditions. But it has only been in exceptional cases, and usually by the aid of more or less troublesome apparatus that it has been used in the class of cases to which I now refer.

The bidet, as I have now for a few years prescribed it, should be of the variety which can be attached to the water-closet seat habitually used by the patient. It should have a nozzle capable of throwing a stream of about the calibre of an ordinary lead pencil or a little less. The head of water should be sufficient to make it impinge upon the parts exposed to it with enough force to excite there a little sensation of smarting and tingling. That degree of force will, for example, be sufficient to enable the patient to take an enema, or, if a female, to take a vaginal injection. The bidet pipe should be movable by means of a handle, so that the stream can be directed against any portion of the external genitals, the perineum, the anus, or the surrounding parts. It should also have connection with the hot and cold water supply of the house, so that the water may be used of any temperature which the physician may prescribe, or which the sensations of the patient may make desirable. Stopcocks should regulate the size and force of the stream, and should be so placed as to be easily reached by the hand of the individual sitting upon the water-closet seat. Such an apparatus can be put in place by an experienced plumber, in an ordinary water-closet, at an expense of from fifteen to twenty dollars; and, in this city the usual head of water obtainable in third-story rooms is quite sufficient for all therapeutic purposes.

The cases in which it may be desirable to use this method of treatment may be divided into two classes: first, those affecting the lower end of the bowel and its outlet; second, those involving the genito-urinary system. Among the first the most important are hemorrhoids, internal and external, prolapsus ani, and slight cases of prolapsus recti; pruritus ani and eczema of the margin of the anus should also be included in this group of cases in which it has now for some time been my habit to prescribe the systematic em-

ployment, twice daily, of the bidet, once immediately after the daily stool, and for the second time, by preference, just before going to bed. As a rule, in all but the mid-winter months, the ordinary temperature of Schuylkill water is that to be preferred, although I am largely governed by the feelings of the patient in this respect. An enema should be taken at each of these times, the lower portion of the rectum being thus thoroughly washed out at least twice daily, after which the stream of water is allowed to play upon the affected region for a period of from five to fifteen minutes. The ordinary and useful effect of cool sponging or washing immediately after stool in cases of hemorrhoids is by this means enormously increased; internal hemorrhoids will, under this treatment, in many cases almost entirely disappear, unless they are exceedingly large and have been frequently inflamed or strangulated and badly neglected; external hemorrhoids, even when fleshy, will shrivel and become scarcely noticeable.

I could detail a number of cases of this character taken from my practice of the last two years. In some instances in which I had been habitually called in, at intervals of a few months, in the cases of old people the result has been practically their disappearance from my list of patients; and they speak in the warmest manner of the great comfort which they have derived from this simple method of treatment.

Perhaps nothing is more distressing among minor afflictions than the trouble described as pruritus ani, and variously attributed to liver disease, constipation, gastric troubles, latent gout, uterine disease, parasites, neuroses, and a number of other causes, varying from the eating of shell-fish, or excessive smoking, to alleged hereditary predisposition. There are very few practitioners of any experience who have not discovered how difficult it is, in any particular case of pruritus, to assign distinctly the annoying symptoms to any one of these causes. Often the whole list may be carefully gone through and eliminated, or the proper remedies may be applied successively, as different theories are adopted, without the slightest benefit resulting. Ointments, lotions, *ordinary* cool bathing will be tried in great variety, but without avail; and such patients will often go from one physician to another, or will fall into the hands of quacks while seeking relief. My list of cases of this character which I have now treated by means of the "bidet" comprises eight.

They have nearly all resulted in cure; requiring to attain that end simply different lengths of time of the application of the douche, with variations in the temperature of the water, and occasionally the use of some emollient salve. I have been particularly struck by the fact that these cases include among their supposed causes widely distinct conditions, and the uniformity with which they have yielded to this simple treatment has led

me to regard with suspicion the orthodox etiology of the disease. In procidentia ani, and in slight cases of prolapsus recti, I have had very satisfactory though, of course, less striking results. In a few instances the trouble almost entirely disappeared, and in all of them it was distinctly relieved. These cases require for their successful treatment a much longer application of the douche, and the water should, in my judgment, be at one or the other extremes of temperature, either quite cool, or as hot as can comfortably be borne.

I am quite aware that the use of cold water in these affections is not in the least a novel plan of treatment; but the method under consideration combines the effects of temperature with a sufficient force of the stream, and admits of the prolonged application of the remedy without effort on the part of the patient, who is in the most suitable position for this treatment, practical points which induce me to make mention of my results in rectal and anal cases.

Agnew says of pruritus, that among the local remedies frequent ablutions with cold water should be mentioned; and of prolapsus ani et recti, that "in all cases where remedies have proved unavailing, or where patients have declined an operation, much good may be done by douching the parts with cold water and applying an oiled compress;" and Allingham says of the same class of cases, that "the frequent and bountiful application of cold water is to be most strongly recommended;" but few authors, so far as I know, have especially alluded to the method of application by means of a bidet.

After all, in every one of the cases which I have mentioned, its use is simply the application of the most elementary and common-sense principles to every day practice, but I am satisfied that this particular method of applying these principles has not received the attention which it merits.—*Medical News, Jan.* 12, 1889, *p.* 37.

ORGANS OF URINE AND GENERATION.

67.—ON RETENTION OF URINE IN OLD PERSONS.

By Christopher Heath, F.R.C.S., Holme Professor of Clinical Surgery in University College, London.

Old people get retention of urine, not because they have enlarged prostates merely, for many men have enlarged prostates after sixty, and plenty of them go through life afterwards without having retention of urine. The reason why they have retention is because they get congestion of a large prostate, arising generally from exposure to cold. What happens is this: an elderly gentleman, who has been wearing thick clothes all the day, dresses in the evening to go out to dinner, and puts on

a very much thinner pair of trousers. Without the slightest reflection upon his appetite in any sense whatever, he is exposed to cold and gets congestion of the prostate. It is very uncharitable to say that all these elderly people have taken more wine than is good for them, or anything of the kind; it is not the fact. Perfectly reasonable and sober persons get retention simply from exposure to cold. They find, when they go to bed, that they are not able to make water; they go on trying, perhaps, to make water at intervals during the night, and late at night or early in the morning you are sent for, to find an elderly gentleman in considerable distress because he cannot relieve his bladder. Such a case as that of course requires a little careful management; but, after all, it is not a very desperate case to treat, unless, unfortunately, the old gentleman has been trying to pass a catheter for himself. The cases that give trouble are where you find that the patient has been making false passages with his own catheter. Some time or other, probably, he has been provided with a catheter, and then, getting retention of urine, he tries to use it, and he makes himself bleed. In such a case you may have a good deal of trouble; but, fortunately, in the great majority of cases no catheter has been used when you are first called in. In going to a case of that kind, of course you provide yourself with suitable instruments. You want an ordinary English catheter of good size, No. 9 or 10. A soft india-rubber catheter is also a very useful thing; and then there are the elbowed or *coudé* French catheters. Usually, with one or other of those instruments you can overcome the difficulty if you only go to work quietly and steadily, giving your catheter a good curve, and slipping it down until you come to some obstruction, then gently pressing against it till the catheter goes in. I think that the old-fashioned English catheter without a wire is the best instrument, but the fashion rather runs on these *coudés*.

Occasionally there are great difficulties. The third lobe of the prostate rises up in the floor of the urethra, and makes it exceedingly difficult to get into the bladder, and in these cases you may sometimes advantageously push the catheter in as far as it will go with the wire in it, and then withdraw the wire and push the catheter on a little further, and softened as it is by the heat of the urethra, it finds its way in. Of course you must bear in mind that the projection of the prostate may be on one side, and that is one great reason why you cannot put the catheter straight in; but you must let it fit itself as it were to the urethra, and gradually find its way into the bladder. However, with care I believe that all these cases are to be successfully treated. You may be obliged to have recourse to a silver instrument; it is better not to do so if you can help it, but anything is better than leaving the patient unrelieved; and the large, well-

curved silver catheter is a very useful instrument in such cases. The size I prefer is about No. 10, and you want a good long curved catheter in these cases. Sometimes where the other catheters have been tried and failed you can pass a catheter like that without any difficulty, if you will only keep along the roof of the urethra.

Now in such a case of retention, supposing that you have drawn the water, what kind of urine will you expect to see coming through the catheter? It is always more or less bloody from the congestion of the prostate. Patients are apt to be alarmed by this, but you need not be, for it is just one of the ways by which Nature relieves the congestion of the parts, and the urine will be bloody for some few days, and then gradually will clear off, and the patient will recover his usual habits. It is also well to bear in mind that these patients do not at once recover the use of the bladder, they cannot micturate for some days. The time varies in different cases, but it is not at all uncommon to find a patient who has had a bout of prostatic retention, going on for a fortnight or three weeks before he can thoroughly make water for himself. It is always well to know that, so as to be able to warn the patient's friends that you will have to come and draw water for him for a few days until he recovers entirely the power over the bladder.—*British Med. Journal, Oct.* 27, *p.* 917.

68.—ON OPERATIVE PROCEDURES IN HYPERTROPHY OF THE PROSTATE.

By R. D. Webb, M.D., Birmingham, Alabama, U.S.A.

[After reference to the various methods at one time or another advocated for the radical cure of Prostatic Retention of Urine, including the operation of supra-pubic prostatectomy recently introduced by Mr. McGill, Dr. Webb says:]

What is now needed is an accurate differentiation of cases, a prudent selection of the process suited to each case, and judicious determination of *the time* when it may be proper to interfere by operative procedures. Much has already been done in the line of differentiation. Mercier, to whom too much credit cannot be given, made a long stride in the right direction when he emphasized the fact, that to median obstruction, frequently without any serious enlargement of the lateral lobes, was due a large proportion of cases of obstructed urine; and his operation was wisely conceived for relief of this condition. He not only emphasized the existence of median obstruction, but by means of his rectangular, short-headed catheters and sounds, did much in determining the situation, form, and size of other obstructions, thus paving the way to a more accurate differentiation of cases.

The varieties may thus be classified:—1. *General enlargement:*

(*a*) Of one lateral lobe. (*b*) Of both lateral lobes.—2. *Median obstruction:* (*a*) Sessile tumours. (*b*) Bar, or valvule at neck of bladder.—3. *Intravesical outgrowths:* (*a*) Pedunculated outgrowths of median portion. (*b*) Prolongation of lateral lobes.

These varieties may occur separately and distinct, or they may be combined one with the other. General enlargement, while it may be the prominent characteristic, may be (and frequently is) accompanied by median obstructions—extra- or intra-vesical—or it may occur without these median complications; while upon the other hand, the median enlargement may be the main or sole trouble. In the extra-vesical median, sessile enlargement, the submucous tumour is at some little distance from the urethro-vesical orifice and raises the connecting tissue (commissure) of the lateral lobes more obtusely, while in the bar, or valvule, the tumour being located nearer the vesico-urethral os, and from the absence of resistance, raises the mucous fold more acutely and near the neck of the bladder. The intra-vesical varieties may be a prolongation of the lateral lobes, one or both, into the bladder; or the median portion may protrude into the viscus, as a pedunculated tumour.

For a wise application of the different methods of operation, we should, as near as possible, differentiate between these varieties, so as to select the operation suited to each variety. (1) We may infer something from the clinical history of the case. If the patient is young (from 54 to 60) with decided obstruction, and no amount of effort will relieve the bladder, we would infer a median enlargement, with valvule at neck of bladder or a pedunculated intra-vesical outgrowth. If the obstruction has been very gradual in its approach, and the patient is still able at advanced age (seventy or more) to empty the bladder after patient effort, we may infer that the enlargement is general. This inference is the more certain if the patient has a stillicidium, or kind of siphonage of the urine, when the bladder becomes distended. This stillicidium is often present when the bladder is over-distended, and the fact of retention is overlooked. (2) But our main reliance is upon physical examination. This is made per rectum or by the urethra. By careful digital examination, per rectum, we may determine the size, hardness or softness—smoothness or roughness—whether one or both lobes are enlarged, whether the enlargement is general, or whether there is an absence of general enlargement, and hence the inference that the obstruction is median or an intra-vesical outgrowth. If now with the sound or catheter (soft-gum catheter of Benas, with Mercier curve preferred), we find the constriction commences at the apex of the gland, and continues evenly until it enters the bladder; and if in *withdrawing* the catheter we find the *grasping* of the catheter continues steadily until it passes the apex, which it does with a kind of jump, we

have full confirmation of the diagnosis of longitudinal or general enlargement.

But, in a general enlargement, there may be complications. In addition to the general enlargement we may have a sessile tumour, valvule, or intra-vesical pedunculated outgrowths, or extensions of the lateral lobes into the bladder. The sessile median enlargement, combined with lateral general enlargement, may be detected by the increased resistance to the passage of the catheter or sound as we reach the portion of the urethra just before entering the bladder. This may be noticed either in introducing or withdrawing the catheter. The pedunculated intra-vesical outgrowths, and intra-vesical prolongation of the lateral lobes whether existing with or without general enlargement, are to be determined by the Mercier rectangular sound, or by Dr. Gouley's cysto-pylometer. This instrument, which is a modification of Mercier's sound, is thus described by Dr. Gouley:—"The beak of the instrument is nearly rectangular and one inch in length. The shaft is in two longitudinal segments—the male segment sliding over the female and being flat at its vesical end to come in contact with the corresponding flat surface on the inner side of the beak of the female segment, and designed to grasp the valvule or bar." The instrument when closed resembles a metallic sound with a short, rectangular curve. It is introduced closed, and when in the bladder the beak is turned gently from right to left, and the reverse—noting carefully any resistance it may encounter. If it meets with firm, unyielding resistance on either side, we may infer intra-vesical enlargement of the lateral lobes; but if the resistance is yielding, and changes its relations to the handle of the instrument, we may infer that we have a pedunculated intra-vesical median outgrowth.

We may with a good degree of certainty distinguish between the sessile median enlargement and the crescentic valvule or bar, with the same instrument. The cysto-pylometer being introduced closed, into the bladder, and drawn outward until the beak rests against the intra-vesical orifice of the urethra, the male blade is carefully withdrawn. The amount of resistance by the median enlargement is estimated fairly well by the resistance met with in withdrawing this blade. After the resistance ceases, the male blade is gently carried toward the bladder again. If it is a sessile median enlargement, the blade will, with a continuous resistance, pass into the bladder; but on the other hand, if it is a valvular bar, the beak will be arrested by it, and the obstruction may be grasped between the beaks of the male and female blades, and its thickness estimated by the amount of separation of the blades, by the scale on the handle of the cysto-pylometer.

Electro-cystoscopic explorations, where the urethra will admit of the introduction of the instrument, may also be brought to our

aid, and we may be able with this instrument to differentiate intra-vesical outgrowths of the prostate from intra-mural vesical tumours.

Thus, by inquiry into the clinical history of the case, careful digital examination per rectum, exploration of the urethra and bladder by the catheter and the cysto-pylometer, we may gain a fair idea of the character and position of the obstruction. This being determined, we may then select the surgical process suited to the case. If the obstruction is from a general enlargement of the gland, we may use the Bottini galvano-cautery; or galvano-absorption, as practised by Dr. Robert Newman; or perineal prostatotomy. If, upon the other hand, the examination shows a general enlargement, with intra-vesical outgrowths, we may resort to supra-pubic prostatectomy combined with urethral prostatotomy by means of an instrument similar to the urethrotomes used in dividing strictures of the urethra; or perineal prostatotomy as practised by Mr. Harrison. Or in these complicated cases, we may use the method of McGuire, and instead of combining perineal or urethral prostatotomy with supra-pubic prostatectomy, be content with a supra-pubic fistula for the exit of the urine. But if we determine that we have a median valvule or bar as the obstructing cause, the Mercier operation is plainly indicated. Or if the case is one of intra-vesical outgrowth with but little general enlargement, the supra-pubic operation is the method indicated.

Another factor of success in these cases is the *time* at which surgical interference should be resorted to. The remark of Mr. Harrison, "that no operation should be thought of so long as the catheter can be introduced," should be modified. When we have at our command methods that may be used with safety in the earlier stages, when the cases are carefully differentiated, and relieve the patient of years of annoyance or suffering, I can see no good reason why we should not use them. And probably in this *timely interference* is where we may expect most in the relief of prostatic troubles. The conservative spirit which has guided our actions to the present may be in danger of going too far, and leaving undone what might be well done. The early use of the process of Mercier, and the milder one of Newman, are well worthy of consideration upon properly selected cases, and the future will doubtless see them often resorted to before patients are worn out by long suffering, and reduced to the last extremity, when the system is badly prepared for any operation.

The operation of Bottini, too, with well-constructed instruments, would seem to be preferable to a life-long suffering or premature death. This operation, which has not been well received in this country, is better thought of in Italy and Germany. Nussbaum, while condemning almost all other forms of surgical relief, approves the galvano-caustic method of Bottini.

Even perineal and supra-pubic prostatectomy, in this day of improved surgical technique and antisepsis, may well be resorted to in the earlier periods, rather than an apathetic contemplation of a life of suffering, and the gradual and sure approach of a condition, in which, *as a last resort*, these measures are attempted with but little hope of success.—*Medical News, Jan.* 19, 1889, *p.* 69.

69.—A CASE OF SUPPRESSION OF URINE TREATED BY REMOVAL OF AN IMPACTED CALCULUS FROM THE URETER BY OPERATION.

By F. W. Kirkham, Downham Market.

On May 24th, 1888, I was called to a case of suppression of urine. The patient was a farmer, fifty-eight years of age. Six years previously he had suffered from renal colic of the right side. After this attack he passed a small calculus. About a year after this he again suffered in a similar manner, the pain being felt most acutely on the right side. The attack lasted about twenty-four hours, when the pain suddenly ceased. On the day I first saw him (May 24th) he was attacked, early in the morning, with severe pain running downwards from the left loin to the testicle. The pain commenced about 8 a.m. He had micturated about half an hour before the pain commenced, but from the onset of the pain no more urine was passed. The pain, which was very severe, lasted for about an hour, when it gradually became less acute, and finally ceased; and, from his experience of the former attack, he thought that the stone had passed into the bladder. Being then quite easy and free from pain, he went about his daily duties as usual, but was very much surprised to find, on attempting to micturate before retiring to rest, that he was wholly unable to void any urine, nor did he feel a desire to do so. Being somewhat alarmed at this, he sent for me, and I first saw him at 10 o'clock in the evening. He then appeared perfectly free from pain, but was very anxious about the suppression of urine. I passed a catheter into the bladder, but found it empty. I ordered a hot bath, and prescribed fifteen minims of tincture of opium to be taken every four hours. On the next day I found that he had still passed no urine, and he continued in this state, passing no urine and suffering no pain or inconvenience, till the 27th, when he commenced to complain of feeling weary and weak. During this period I administered hypodermic injections of pilocarpine every day, which produced profuse diaphoresis. He continued to take a fair amount of light food with evident relish, and his bowels were relieved on the 26th and 27th, the motions being firm. On the 30th his appetite failed, and he complained of headache and drowsiness with a feeling of great prostration and of muscular twitchings, and he voluntarily took to his bed, which up to that time he had not done.

After considering the previous history of the case, I concluded that the right ureter had been obstructed by the former attack, that the right kidney was thus rendered useless, and that the left ureter was now also blocked by the recent impaction in it of a calculus. Despairing of his recovery, I told my patient of the opinion I had formed of his case, and felt compelled to give a very gloomy prognosis. I then requested him to allow me to cut down upon the ureter, in the hope that, if I should not be fortunate enough to be able to remove the calculus, I might possibly save his life by making an incision into the pelvis of the kidney to procure an outlet for the urine. This he readily gave me his permission to do, and accordingly at 1 p.m. on May 30th ether was administered, and an incision was made from the tip of the last rib towards the anterior superior iliac spine. The integuments, muscles, and fascia were carefully divided, and the kidney at length exposed. After carefully exploring the kidney, and finding no stone therein, the exploration was continued downwards along the ureter, in which a stone was distinctly felt about half an inch above where the ureter crosses the commencement of the external iliac artery. There was a little difficulty in reaching the ureter easily in this part of its course, but after slightly enlarging the wound I ultimately succeeded in cutting into and extracting from the ureter a calculus about the size of a large date-stone. A little urine escaped from the incision, but the amount was, as far as I could judge, very small. The hemorrhage also was slight. A large drainage tube was introduced into the wound, the edges of which were held together by sutures, and a thick layer of iodoform wool was retained over it by a bandage. Half an hour after the operation an ounce and a half of urine was passed naturally; afterwards at frequent intervals small quantities were passed, and during the first twenty-four hours after the operation twenty-six ounces of blood-stained urine were voided. On June 1st forty ounces were passed, and it ceased to be blood-stained. From this date he progressed most satisfactorily, and by July 10th the wound had quite healed, and he was enabled to resume his occupation. —*Lancet, March* 16, 1889, *p.* 525.

70.—THE TREATMENT OF TIGHT URETHRAL STRICTURES.

By Reginald Harrison, F.R.C.S., Surgeon to the Royal Infirmary, Liverpool.

The circumstances under which retention of urine occurs in the male are so varying that it is impossible to lay down general rules for its management, other than, where practicable, the employment of the catheter with as little delay as possible. In the majority of instances where retention happens in connection with a urethral stricture the relief thus afforded is not

only sufficient for the emergency, but serves as the starting-point for the local treatment which in due course is to follow. Hence in those cases where, from a variety of causes, retention of urine supervenes upon the slighter forms of urethral stricture, the introduction of the catheter followed by the appropriate local treatment—such, for instance, as gradual dilatation—generally suffices. The cases now under notice differ importantly from these, both in the conditions under which retention presents itself and in the treatment to be employed. I refer to the severest forms of organic stricture, where, by the conversion of more or less of the urethral wall into a mass of tissue in every respect resembling the worst kind of cicatrix, not only has the urethra been reduced to the smallest dimensions compatible with the escape of urine from the bladder in drops, but the bladder and associated parts are also in a condition of active inflammation. The processes to which I have thus referred are of a gradual kind, and, as a rule, the result of months, or even years, of continued neglect. It is remarkable how often we meet with instances of this kind, where persons have gone on, hoping, I suppose, against hope, and quite regardless of the increasing difficulty with which their urine was obviously voided. The conditions here are very different from those where retention supervenes upon spasm of a more or less transient kind. Taking the cases I am now passing under review, in the course of time one of two things happens: either abscess in immediate relation with the stricture, which may open either with or without extravasation of urine, or complete retention of urine. It is with the latter contingency I am now dealing. The best that can be hoped for under the condition thus sketched out is that the surgeon will be able to pass a small catheter through the contraction, and thus relieve the urgency of the retention. Let us now take a case where the operator has succeeded, probably under an anæsthetic, in passing a No. 1 metal English catheter through a densely contracted stricture of half an inch or more in length, and that he has verified his position (1) by the escape of urine in drops by the catheter, and (2) by his finger in the rectum. The instrument is firmly grasped by the stricture, and there can be no doubt as to the correctness of its position. Will this expedient serve to meet all the exigencies of the case, even supposing that the urine can be slowly drained off in this way? To tie such an instrument in the bladder, and to leave the urine to drain away indefinitely, is, I am sure, a most hazardous proceeding, though it may be accepted as an alternative. In all these cases more or less acute cystitis has been in existence for some days, and the urine is high-coloured, offensive, and loaded with deposit, and what could thus be done would be to drain off the most fluid and least harmful of the contents of the bladder, leaving the more poisonous remainder to add to the mischief

already going on in the bladder, ureters, and kidneys. Such a plan usually ends with the death of the patient in a few days of what may with truth be called a catheter fever.

A considerable experience in the class of cases coming under this category has taught me very forcibly that the introduction of the small catheter must here be regarded only in the light of the initial proceeding. In addition, the bladder must be put in a position for thoroughly draining itself, otherwise the patient's chances of recovery are exceedingly small. Where there is a perineal tumefaction indicating that suppuration is occurring, no question can then be entertained as to the immediate necessity for perineal section. The small catheter will serve as a guide, and upon it the stricture can be completely divided, though the proceeding is easier when a grooved staff, however small, can be substituted. Where there is a fear as to the possibility of being able to make this change, the catheter should be utilised as a guide for the incision. I have often used a small metal catheter under such circumstances, and have never had much difficulty in completing the operation of perineal section, with division of the stricture, to my satisfaction. When the perineum is opened in the median line, far more can be done with the index finger as a guide than is generally supposed, so long as we have the means of ascertaining the precise line the urethra takes. When, however, there is no perineal tumefaction, and the catheter is merely persistently grasped within a hard fibrous stricture, other means must be taken at once to bring up the calibre of the urethra to something like its natural dimensions, so that the bladder may be kept thoroughly drained of all its contents. The mode of doing this will be best illustrated by the narration of the following selected cases, where the same object was aimed at, but in different ways. I have very little preference for any one way of bringing the contracted urethra up to its normal dimensions so long as thorough urine drainage and cleanliness can be obtained. These are most important factors in the antiseptic surgery of the urinary organs.

The first case I will relate is that of a gentleman who had been suffering for some years from a traumatic stricture of the urethra following an injury to the perineum. He had had many attacks of retention when abroad. Catheterism was always difficult. He had been aspirated several times above the pubes, and on one occasion before I saw him had perineal section performed. The last operation had not been a success. When I first visited him he was not suffering from retention, but only a No. 1 English metallic bougie could be passed through an extremely hard stricture. I then advised that perineal section should again be practised, but upon somewhat different lines from the proceeding he described to me. However, nothing was then done, and I heard no further about him for some months, when I was asked

to see him for urgent retention of urine, where catheterism had been attempted, but without avail. Under chloroform, and with difficulty, I passed a No. 1 metallic catheter, and this, with much patience, was gradually increased up to a No. 4 English. This, with some misgivings on my part, was tied in. The stricture, however, was so tight that I feared the catheter might give way in my attempt to increase the size. In the early morning the instrument became plugged, and was eventually withdrawn. Further attempts were made at catheterism, but without avail, and I was again summoned. Returning, I took with me a fine stricture stretcher (described in my Lectures on Urinary Diseases, 3rd edition), by means of which I succeeded in dilating the stricture up to a No. 13 English. A full-sized catheter was then passed, and the bladder emptied of its most offensive contents. As the patient lived in a rather inaccessible position, the catheter was tied in and retained for three days. This process of divulsion was the course of proceeding which in the first instance ought to have been practised; as I had no instrument of this kind with me sufficiently fine for this purpose, I reluctantly contented myself with retaining the small catheter. I saw this patient a month afterwards. His urine was voided in a full stream, and was healthy. I passed a No 12 bougie for him, and taught him how to do this for himself.

The next case is that of a man aged about twenty, who presented himself at the infirmary a few months ago with a very tight stricture of some years' duration, for which he had received no previous treatment whatever, in spite of the gradual diminution in the size of the stream. He appeared to have been drinking heavily. His stricture was very fibrous and contracted, and I could not pass even the smallest metal catheter. However, I succeeded in getting through with the fine filiform bougie of a Maisonneuve's urethrotome. In this way I was able to perform an internal urethrotomy, and then to empty his bladder of a quantity of most offensive urine with a large catheter. The patient would not remain in hospital; he was, however, brought back in forty-eight hours in a state of delirium tremens, but passing his urine freely. He remained in the hospital for ten days until this complication was over, when he was discharged, passing urine normally and able to introduce a full-sized bougie for himself.

The third and last case I shall introduce was also recently admitted into the Royal Infirmary. It was that of a man aged thirty-two years, who had long suffered from stricture, and had undergone some operation for it in hospital seven years previously. The meatus of the urethra was involved in a cicatricial mass connected with the foreskin, and in addition there was a long fibrous subpubic contraction. He had extreme retention of urine,

which had evidently been only very partially relieved by the introduction of a small catheter prior to his admission, With much difficulty, owing to the double nature of the obstruction, I could only succeed in passing a No. 1 metal Lister's bougie. This was most firmly grasped. Under an anæsthetic I managed to introduce the entire series. The bladder was then emptied of much offensive urine by a large catheter. The stricture at the orifice was freely divided with a probe-pointed bistoury. This patient convalesced rapidly, and was able to leave the infirmary in the course of ten days, passing a full-sized instrument.

In connection with these cases there are some details to which I could refer, as I am satisfied that much of the success attending them, as well as of others of a like kind which have come under notice, is due to their recognition. Every care was taken to prevent the occurrence of any form of urethral septicæmia, as indicated by the occurrence of rigors and fever following the performance of the operation that was selected. This consisted in the employment of local and general measures. As soon as the bladder was emptied with a large catheter, it was thoroughly washed out with a perchloride solution of 1 in 5000; three or four ounces of this fluid were left behind, so that the first urine which was spontaneously passed was largely impregnated with this antiseptic. As a rule, no catheter is tied in, nor can I remember an instance where its subsequent introduction became necessary. Before the patient is sent to bed the urethra is distended with carbolic oil (1 in 20), which is well rubbed into the part where section or divulsion may have taken place. Five-grain doses of quinine are given every four hours; in some instances boracic acid appears to have answered equally well. They seem, by sterilising the urine, to prevent rigors and fever.

For rapidly dilating very fine strictures, I have found Banks's filiform bougie of great service. It is an instrument that is well-known in America, but not in this country. It is made of highly polished whalebone, on the principle of the wedge, and can be used with great safety. When completely passed through the stricture, a much larger-sized ordinary catheter or bougie can usually be made to follow easily. These instruments, of which there are several sizes, have been supplied to me by Messrs. Tiemann of New York.

It is not to be assumed that the treatment this class of cases immediately received, as illustrated in the three cases selected, represents in each instance that which was considered best so far as the future of the stricture was concerned. On the contrary, I feel sure that in two of the illustrations perineal section with complete external division of the stricture would have given far more reliable permanent results, and may yet have to be brought under consideration. Retention of urine, however, sometimes

happens where the surrounding conditions render the performance of such an operation, on an emergency, quite out of the question. It is in view of this that I have ventured to illustrate how in my own practice it has been found possible to tide over the difficulties which attend this complication when it occurs in connection with the worst forms of organic urethral stricture.—*Lancet, December* 29, 1888, *p.* 1269.

71.—ON SUTURE OF THE URETHRA IN CASES OF PERINEAL SECTION.

By A. Marmaduke Sheild, F.R.C.S., Assistant Surgeon to Charing-Cross Hospital, London.

I venture to call the attention of surgeons who may perform the operation of external urethrotomy to the practice of uniting the urethral wound by means of catgut sutures. In cases of perineal section as commonly practised, no attempt at closing the perineal or urethral incision is made. An indolent, deep, and suppurating wound results. At the bottom of this the introduced catheter is exposed, often for several weeks. Healing is protracted and unsound. It may truly be said that by the aid of the fine catheters and bougies of the present day "impassable" strictures should hardly be found in the practice of a skilled surgeon. During the past two years I have met with three cases of stricture which resisted the passage of instruments, though of varied size and form, and used with all observation of patience, gentleness, and perseverance. In these patients, men of over forty years of age, who had long suffered from stricture, the common conditions of perineal fibroid induration and great sensibility of the parts were observed. One of them had suffered for three months from sinus in the perineum. The operation was in all cases conducted after the fashion so well described and practised by Mr. Wheelhouse, the urethra being opened in front of the stricture. In the performance of urethral suture the following points were observed:—1. The coverings of the urethra were divided by an incision of limited length, and the urethra was clearly defined and felt with the staff pressed against the face of the stricture. 2. The urethra was opened with a fine and very sharp knife, which did not push the fibrous tissue in front of it. 3. The stricture having been passed, incised, and a large gum instrument passed into the bladder, a series of catgut sutures were introduced through the margins of the cut urethra by means of a curved needle. They were placed close together, and, when tied, the catheter was quite concealed. The wound was now dusted with iodoform, and the soft parts covering the urethra were united. This was effected by fine wire sutures deeply introduced. About one-third of the length of the incision was left open posteriorly to ensure drainage, and

great care was taken that no pouch or pocket could be left in which discharge could accumulate.

The after-treatment to be carried out may be briefly indicated. The perineal wound must be kept clean, and supported with a pad of iodoform wool. The catheter should be retained *in situ* for a week, and the bladder washed out daily with warm boracic fluid. The silver sutures can be retained for fourteen days; they cause little irritation. The catheter should be worn for about a month, and frequently passed afterwards. In the three cases alluded to, union was speedy and complete. In only one of them did any urine leak through the wound. Twelve and eighteen months have elapsed in two of the cases since the performance of the operation, and the patients are able to micturate and pass large instruments with ease and comfort. I would venture to insist upon the importance of making the incisions with a very fine and sharp knife, and of checking all bleeding by sponge pressure, and clearly defining the urethra in a good light before opening it. I have been unable to discover any published account of urethral or perineal suture in the works or writings of English surgeons.

I am quite aware that the experience of these three cases is insufficient to establish the value of this proceeding. But I think I am justified in calling the attention of surgeons to it, and trust that it may receive a trial in appropriate cases. Strictures which call for external division are comparatively rare. It is only by combined experience that the value of any operative modification can be determined.—*Lancet, Oct.* 20, 1888, *p.* 760.

72.—ON A NEW METHOD FOR THE RADICAL CURE OF VARICOCELE.

By W. H. Bennett, F.R.C.S., Surg. to St. George's Hos., London.

In my opinion, no operation for the cure of long varicoceles is perfect unless it includes some proceeding planned deliberately for attaining an immediate and permanent shortening of the cord, with the object of relieving the patient from the necessity of wearing some form of external support for a long period, as well as ensuring an immediate freedom from the discomfort of the dependent testes, which is not only inconvenient in itself, but tends to the recurrence of various symptoms, unless the support of a proper suspender be continually afforded. With the object of deliberately effecting this direct result, I have been in the habit for some time, of performing the operation described below, which may be adopted, not only in cases of great elongation of the cord, but in most instances in which the abnormally low position of the testis is at all marked; in fact, whenever shortening of the cord is likely to be beneficial. In severity, the proceeding is exactly on a par with the ordinary open operations, but convalescence

is more rapid, and the ultimate result undoubtedly better. The precise extent of the varicocele which it is desirable to resect in any given case, is best determined by placing the patient in the standing position, and roughly estimating with the eye, or, better still, by measuring with a tape the degree of elongation of the cord: for instance, should the testis be three inches lower than normal, then certainly not less than three inches of the veins should be included between the two ligatures, as it will be desirable to excise at least two inches and a half.

Details of the operation for the radical cure of varicocele by excision of a portion of the veins and immediate shortening of the cord.—The patient having been anæsthetised, the veins are made prominent and put somewhat on the stretch by grasping the varicocele between the fingers and thumb of the left hand, care being taken at the same time that the vas deferens is pressed back out of the way of harm. Through the skin, over the veins thus rendered prominent, an incision is made which in no case need exceed an inch and a half in length. One or two touches of the scalpel will now suffice, the veins being pressed well forwards to expose the thin fascia (immediately surrounding the varicocele), through which the vessels can be clearly seen. The knife is now laid aside, the veins not having been actually *denuded*. By means of an aneurysm needle or eyed probe a thoroughly carbolised tendon is passed round the fascia referred to with its included veins, and drawn down to a point as near the testis as is thought proper; it is then securely tied, the ends being left long. The varicocele above this ligature is then freed, together with its sheath, from the surrounding parts by a few sweeps of the finger for a distance sufficient to allow of the length previously decided upon as approximate for excision to be drawn out of the wound. A second tendon is now passed around the upper end of the freed veins and tied in a *single knot* only, which is kept tight by an assistant. The portion of the varicocele included between the ligatures is divided above and below, about a quarter of an inch (not less) from the corresponding ligature and removed. The upper ligature is then finally tightened and its knotting completed, the ends being left long as before. The wound having been freely irrigated with warm sublimate solution and all bleeding (be it ever so slight) arrested, the cut ends of the stumps left by the division of the varicocele are brought together and retained in permanent apposition by knotting the ends of the upper ligature to those of the lower, thus at once raising the testis to about its natural level. The ligature ends are now cut off quite short and the operation is completed. The edges of the skin fall together, there is no need for either suture or drainage tube, and all that remains necessary is the careful application of the antiseptic dressing. By leaving the sheath of fascia which immediately surrounds the varicocele intact, and including it, with

the veins, in the ligature, two objects are attained: (1) the certainty of passing the tendon around all the affected vessels, as none of these ever lie outside the fascia: and (2) the prevention of any material chance of recurrence of the abnormally dependent position of the testicle, which is probable if the veins are actually denuded before the ligatures are applied and the stumps brought together in the manner described, since it is manifest that the weight of the testis would tend to drag the veins considerably out from the sheath above, whereas this fascia, if included in the ligatures, not only obviates this tendency, but, in fact, also carries the weight of the dependent organ without stretching to any appreciable extent. The postponement of the final tightening and knotting of the upper ligature until after the division of the veins is a point of importance, as there is some risk, if the tying be completed before the division, that the shrinking of the veins which follows the escape of blood contained in them may result in the ligature becoming sufficiently loose to allow of an oozing of blood into the wound, and indeed may possibly, as I have once seen, permit the stump to escape from the ligature altogether, in which case the primary object of this particular operation would be defeated. Every care must be taken to avoid any possibility of oozing into the parts around the stumps, as the formation of a clot in the wound delays the healing and greatly prolongs the convalescence. Although the tying together of the ligatures in the way mentioned is always, so far as I have seen, sufficient to keep the stumps in contact, a fine gut suture may, if thought necessary, be passed through the extreme edges of the cut surfaces of the stumps on the side remote from the ligature knots. Very accurate apposition is not, however, absolutely necessary, as the union of the parts is effected through the medium of the callus which is thrown out around them, rather than by any direct adhesion of the cut surfaces. It is hardly needful to state that all manipulation of the veins must be confined to the parts lying between the two ligatures, as any injury to the vessels beyond the constricted points, whether above or below, is an element of risk. If the details of this procedure as described above are carefully carried out, the subsequent course of the case is simple and uninterrupted. In four or five days the wound has, as a rule, healed, and the approximated stumps are surrounded by a mass of callus. At the end of a week the patient may usually be allowed out of bed, and although the swelling about the cord does not entirely disappear for perhaps a month, any ordinary occupation may be resumed in fourteen days or thereabouts. Upon the absorption of the callus nothing abnormal is perceptible to the touch but a very slight circumscribed hardness, which remains permanent, around the ligature knots. A suspender is worn up to the time of the disappearance of the swelling, and then finally discarded, leaving the testis well braced

up in its natural position with the scrotum accurately adapted to it no matter how long and flabby that structure may have previously been. Little or no pain follows the operation, but during the first fortnight there may be some œdema of the scrotum, and the testis is generally slightly tender. I have seen no real orchitis, nor has there been, in my cases, suppuration about the wound or any constitutional disturbance. I am not acquainted with another method so rapidly producing a "cure," which may fairly be called "radical." With a view to obviating the abnormally dependent position of the testis in varicocele by the provision of a natural suspender, the operation of shortening the scrotum by excising a portion of the skin and dartos was at one time extensively practised in this country, where it has now very properly fallen into disuse. As, however, it is still to some extent adopted on the Continent and in America, a word of comment is necessary. The proceeding is useless in practice and unsound in theory, since it is based on an entire misapprehension as to the functional relation of the scrotum to the testes—a point of some interest, concerning which it is only necessary, for my present purpose, to say that, to whatever degree the scrotum may be diminished in size by operation, it will again rapidly become stretched until a length is acquired which will be determined by the lowest point attainable by the testis as it hangs at the end of the elongated cord. On the other hand, if the testicle is raised by shortening the cord, the scrotum will, be it ever so long and flaccid, spontaneously contract and accurately adapt itself to the testicle in its new position.—*Lancet, Feb.* 9.

AFFECTIONS OF THE SKIN, ETC.

73.—ON ALKALIES IN THE TREATMENT OF ECZEMA.

By Frederick Pearse, M.D., F.R.C.S.

The treatment of eczema, like that of many other affections, is roughly divided by therapeutists into local and general. Some men lay great stress upon local applications—a few even considering them of paramount importance—and others place the general treatment first. Considering the many variations which the condition we call eczema assumes, I think we must recognise that it is in reality not a single disease, any more than the affections included under the term bronchitis; but that the eczematous eruptions of the skin are simply pathological changes which may be induced by several distinct complaints. External irritation in some persons is sufficient to cause an eczematous eruption, while in others nothing of the kind ever occurs from such a cause. In the former case we say the patient is "liable to eczema," or that he manifests the "eczematous diathesis": in other words, with or

without external irritation eczema in some form or other is liable to occur in him. I admit the existence of the eczematous diathesis, but I maintain that even in patients liable to eczema the eruption may be induced under a great variety of conditions.

It is the condition under which eczema appears in those who are predisposed to it that we have to consider in our treatment. I shall therefore pass at once to the external causes. First we have mechanical irritation, such as friction of clothes, scratching, and many of the irritations giving rise to "trade eczema." Here of course the treatment consists in removing the irritation, or artificially protecting the skin against its effects. Next comes chemical irritation, such as arises from irritating medicaments and morbid discharges. These again must of course also be removed or neutralised. Temperature sometimes acts locally, as in patients suffering from the so-called *eczema solare*, in those exposed to artificial heat, and again in those exposed to cold and to dabbling in water. In all these cases it is often impossible to cure the eczema unless the exciting cause is recognised and removed. Many of these cases, however, are simple dermatitis and not true eczema.

Then as to the internal causes. As I have said, I believe there is an eczematous diathesis which lies at the bottom of all forms of eczema, but that this tendency is only awakened under certain conditions. We have found the local conditions to vary, the general may vary also. It will usually be found, in all cases of true eczema, that the patient is "out of health," or feels "out of sorts." I do not think however that an exhausted nervous system, whether from worry, overwork, or excessive strain, is ever a factor in the production of eczema. It flourishes, indeed, amongst the weak and sickly, but not amongst the class we term neurasthenic. Undoubtedly the most common association of eczema is with some derangement of digestion. This will be found actually to exist or to have lately been experienced. Dyspepsia is a very frequent concomitant. I cannot help thinking that we have here the *fons et origo mali*, although some authors consider the nervous system chiefly at fault. But as I am not now debating the pathology of eczema, I shall only allude to the improper feeding of infants and the presence of uterine disorders as two other conditions under which this affection of the skin appears. The frequent occurrence also of eczema in those of the rheumatic diathesis must not be forgotten, as it often proves a most useful guide in treatment.

Acting on the principle that acids applied to an acid-secreting surface and alkalies to an alkaline-secreting surface diminish the respective secretions, I have treated a large proportion of cases of eczema for many years by alkaline applications. The method may be termed unphysiological, on the ground that the morbid exudation of the eczematous skin has no parallel with the normal secretion of glands. My answer for the present must be the results. There

is not the slightest doubt that an acid applied to an eczematous surface will irritate and increase the exudation, and I am equally satisfied that alkalies judiciously applied will have a contrary effect. Whatever views we may have on the pathology of eczema, the great diversity of methods shows that at present we have no very definite *rationale* of treatment. At the same time I do not argue that alkalies have any specific action. No one who has seen much of eczema can doubt that the associated disorder to which these patients are most subject is that connected with their digestive organs. The internal treatment is therefore undoubtedly of paramount importance. The one thing which appears most successfully to meet this indication is some saline aperient, which produces a "weeping" from the mucous surface of the intestines and also hurries on the contents. This clinical fact suggests that the cause of eczema lies in some imperfect process of digestion, whereby abnormal chemical compounds are absorbed, and, circulating in the blood, irritate especially the skin structures. These compounds are I admit unknown. Not only, however, are saline aperients successful in the treatment of eczema, but alkaline combinations are especially so. The most common prescriptions contain these drugs in endless variety.

This treatment is very successful for adult patients, but it is not nearly so useful in the eczemas of young children. In these cases, however, alkaline external applications are as successful as in those of riper years, if not indeed more so. Whether the fault in adult life lies in deficiency, and that of eczematous children in excess, of secretion of acid gastric juice, is difficult to decide; but the internal administration of alkalies combined with saline aperients in the eczemas of grown-up people is that on which the greatest general reliance can be placed. In children, however, an exactly opposite line of treatment will often be found successful. It is especially in scrofulous children and in infants that I have found benefit from the internal administration of hydrochloric acid. These little patients have generally some palpable digestive disturbance. I have frequently found unexpected benefit from the internal administration of nitrohydrochloric acid combined with sulphurous acid, at the same time pursuing the external application of alkalies. These latter may be used as solutions of bicarbonate of sodium (5 or 10 grains to the ounce), sometimes comcombined with small quantities of glycerine, or as weak solutions of liquor potassæ (10 or 30 drops to the ounce). As a general rule it may be said that the more acute the eczema, or rather the more copious the exudation, the weaker must be the application. It should be made, whenever possible, continuously. In chronic cases an alkaline ointment may sometimes be used, such as one containing 10—30 grains of bicarbonate of sodium to the ounce of vaseline.

The above is a brief sketch of the methods I have successfully

adopted in a very large number of cases, many of which had been treated on other principles and with entirely different drugs without avail. At some future time I hope to enter into the details of particular cases, and to deal with the treatment applicable to the variations which the eczematous state presents.—*Practitioner, Oct.*

74.—ON AN ANOMALOUS FORM OF ECZEMA.

By E. D. Mapother, M.D., Consulting Surgeon to St. Vincent's Hospital, Dublin.

Last January I was consulted about a raw surface involving the right tragus, and the hairless skin in front of it, and at once its likeness to Paget's disease of the mammary areola struck me. It was oval, about 1½ inch vertically and an inch transversely, florid and moist as is the glans penis during balanitis. The patient was a married woman of 40, long troubled with uterine maladies. Referring to my notes, I found records of two very similar cases, unilateral and in females, but of diverse ages—45 and 12. In the latter there was also a small patch a little above the eyebrow. The uniform, florid, oozing surface without granulations, hard and slightly raised, but without the rolled over edge of rodent ulcer, without pain or much itching, stubbornness to treatment, without occasional disappearance, characterised all the cases. Dr. Crocker has observed a like condition on the scrotum.

Some physiological analogies group these regions: in all the sebaceous glands are very large; those round the nipple were, by Bidloo in 1685, described as supplementary mammary glands. The soakage of the skin by the overflow of milk or by the saliva of the infant may be prevented by their oily secretion, and in the scrotum and parotid region a similar waterproofing protection may be afforded against the urine and the sweat falling from the temple respectively. All agree as regions in which the arrival of puberty is manifested. In the female the scanty hair in front of the ear remains of the lanugo kind, and the glands are correspondingly large. The raw surfaces occasionally noticed round the lips, the nostrils, the eyelids, and round the anus are somewhat like, but they are rarely so chronic as Paget's disease, or the condition I note in the parotid region. All the cases healed, a slightly depressed unpigmented cicatrix remaining. Some forms of eczema undoubtedly leave scars, reaching well into the papillary layer. In 1879 Professor McCall Anderson saw with me a girl aged 4, who had somewhat similar raw eczematous patches on one cheek, and on the flexures of both knees and one elbow and ankle. The oozing was excessive, and did not cease for six years after, when rickets of the spine appeared, due probably to the saline flux. Pale, somewhat concave scars endure.

It may be mentioned that Paget's disease of the mammary

areola appears to be rare out of England; so say Scotch and American observers; and except a case which I observed in St. Vincent's Hospital, I can find no record of an instance in Dublin. My patient was an Englishwoman. It may be that there is a peculiar microbe which has not been freely imported, nor has found a fit soil. The curative effect of that greatest of parasiticides, mercury, in the cases here noted, supports that probability, as also does the apparent usefulness of exclusion of air. All forms of eczema on the face are obstinate, because of the unavoidable access of light and air. The earlier cases I treated by an ointment containing carbolic acid, mercurial ointment, and vaseline; in the latest, that most valuable natural agent, lanolin, was employed as the vehicle; but in all, the surface being so limited, exclusion of air was attained by Seabury and Johnson's rubber plaster carefully adjusted.—*British Med. Journal, Jan.* 5, 1889, *p.* 8.

75.—A DESCRIPTION OF LICHEN RUBER.

By R. W. Taylor, M.D., Surgeon to Charity Hospital, and to the Department for Skin Diseases, New York Hospital.

[The following description is based upon the personal observation of an example of this rare disease. The paper is one of the greatest importance to dermatologists, containing, as it does, a table of the differential diagnosis of Lichen Planus and Lichen Ruber, and a detailed description, illustrated by most beautiful drawings of Dr. Taylor's case, and of the microscopical appearances found in a portion of the affected skin.]

The invasion of the disease begins with the appearance of distinctly isolated papules, which more or less promptly form patches by multiplication and coalescence. While infiltration and varying degrees of desquamation take place in the coalesced patch or patches, the area of the disease is further increased by new crops of isolated papules, which appear at their margins or at some distance from them. It thus occurs that we usually find all three stages existing in the same patient. For clearness of description, therefore, we shall follow this division.

The Stage of Isolation of the Papules.—There are none of the classical features of inflammation to be observed, for the affection, though subacutely inflammatory in nature, evidently develops *à froid.* When first visible, the papules are of the size of the point of a pin or needle and, in fact, are so small that they can hardly be called miliary. If there were but few they might be mistaken for little collections of dirt seated very superficially in the hair and sebaceous follicles. They present to the touch a sense of firmness of structure even thus early, and give to the skin a roughened feel. They soon become miliary in size, and for the most part look like little brownish-red elevations. On parts

where the skin is thin and delicate, such as the inner aspect of the arms and abdomen, when examined individually with the magnifying glass, they look like little conical masses of yellow wax, and to the eye are of a neutral orange-color. There is an entire absence of circumferential hyperæmia, though this feature may be observed in a mild degree upon the face, neck, and palms, usually, however, resulting from friction. In their early stage, then, the papules are miliary and conical, and I can readily understand why observers who strive for elaboration in nomenclature call the disease lichen ruber acuminatus. This conical condition of the papules is not of long duration. The lesions grow slowly but surely in area, and as they do so they increase in salience, their surface becomes rounded and obtuse. They may retain this rounded bee-hive shape for a period equally as long as they remained conical, and consequently it would be equally as reasonable and appropriate to call the disease in this stage lichen ruber obtusus as it would lichen ruber acuminatus. At this time the papules are still very minute bodies, but they have not yet attained their growth. They continue to increase in area until they reach a diameter of a line, or even less, when they may be said to be fully formed, since henceforth they, as papules, undergo no peripheral growth. Remaining in the obtuse condition for a short time, as they grow they become flattened, and then a depression in their centres corresponding to the orifice of the follicles may sometimes be readily noted and at other times not seen. This central depression, however, is very minute—so much so that the term umbilication can hardly be applied to it. The fully formed papule then presents a rounded outline, with, perhaps, in some cases, a tendency to ovoid, but nothing akin to the angularity, star-shape, or polygonal shape of lichen planus is seen. The papules jut up sharply and vertically from the surface of the skin. There is a wonderful uniformity in the size of these lesions; each papule seems destined to cover an allotted space, and it does it and no more. From the commencement of their development very minute, thin, more or less adherent scales are seen on the papules, and from them during their whole course a similar mild desquamation occurs.

In their fully developed condition, therefore, the papules are rounded, slightly umbilicated, and scaly. Owing to the increase of corneous cells on their surfaces, they present a slightly shining and glistening appearance which is best seen in the sunlight, in an oblique direction. They never have the decidedly micaceous silvery appearance of the lesions of lichen planus. In this stage of isolated papules their colour often varies in a striking manner from a dark-yellow to a brownish-red, according to the condition of the circulation. They never have the deep violaceous-red and even crimson-red color of the papules of lichen planus,

which further differ so markedly from those of lichen ruber in the fact that they convey to the eye the impression that they result from much more profound morbid changes.

When the papules of lichen ruber are thus fully developed, when they are not very numerous and are distinctly isolated and clustered in groups, they may perhaps be mistaken, for a short time, for lichen planus, particularly if they should occur on the inner surfaces of the arms and near the wrists, on the abdomen, or on the antero-inner surface of the thighs or legs. Under no other circumstances whatever, I think, can a trained observer confound the two diseases. But, even under these conditions, time and the natural course of the papules will soon settle the question as to their nature, if it has not already been cleared up by the history of the eruption and of its concomitant features.

When a portion of the body thus becomes the seat of these scattered papules, new crops continue to appear, more or less rapidly, and become intermingled among the older ones, until, in the end, they are so closely aggregated that they fuse together, and may cover the whole surface, but sometimes little oases of unaffected skin are left. While this is going on new papules, distinctly isolated, form at the periphery or on parts of territory beyond, and run a subacute course until, in the end, nearly, if not the whole body becomes covered. The extension of the disease is therefore progressive from one or more parts; it rarely or never jumps from the upper to the lower extremities, nor does it run the erratic course of eczema.

The Stage of Coalescence of the Papules.—The transition of the isolated papules into diffuse patches of eruption is shown in the chromo on the abdomen and on the chest-walls in a more graphic manner than pen can depict. When, by reason of maturity of growth and multiplication of numbers, the papules have coalesced, it will be seen that they are arranged in distinct and symmetrical rows, corresponding to the direction of the surface furrows and the connective-tissue frame-work of the parts.

For some time, therefore, the contour of the individual papules in the stage of coalescence may be quite clearly made out. In this stage of the eruption lichen ruber may be said to be fully developed, since beyond it retrograde changes are observed. It is then a vast conglomeration of fused papules of a characteristic warm brownish-red color, giving forth their branny scales in moderate quantity. When the fingers are passed over an extensive surface, a dry, smooth, leathery feel is communicated. There is not as yet observed that harsh sensation which has been, I think, rather extravagantly compared to that of a nutmeg-grater or of a file, a condition which, however, may occur later.

There is in this stage decided infiltration of the skin, but it is evidently superficial, and not seated in the derma and connective

tissue. It is comparable to that of dermatitis exfoliativa, and not to that of eczema. Later on it may be more pronounced, particularly on the palms and soles and on the fingers.

More or less rapidly the tendency of the disease shows itself in the effacement of its papular elements. These little bodies become more and more indistinct individually, until at last the eruption consists of a uniform brownish-red, slightly scaly, superficial thickening of the skin, which is traversed by the minute natural furrows of the skin in longitudinal, circular, oblique, and transverse directions. Owing to the increase in the corneous elements of the skin, these furrows become deeper than normal, and they divide up the morbid areas into various shapes, some very noticeable, others less so, and corresponding to their direction, after the manner of the hide of an alligator. This constitutes the third stage, in which the disease is chronic, indolent, infiltrated, scaly, and slightly pigmented, all signs of previous papulation having disappeared and no new lesions then showing themselves. In this stage, judging from my experience with cases seen on this side of the Atlantic, the disease may undergo involution after considerable periods. In Germany, however, the disease frequently persists until a dry, file-like, harsh, infiltrated skin results, the superficial disease having then caused a true inflammation of the whole thickness of the skin.

In this stage the brownish-red color of the eruption becomes deeper, the itching may be rather more pronounced, the infiltration is greater, the skin surface decidedly rougher and more scaly, and the minute hairs are either destroyed or their nutrition is much impaired.

It can readily be imagined that, in inveterate cases, such as Hebra first observed, the whole integument was transformed into a harsh nutmeg-grater or file-like tissue. It will be seen, therefore, that the roughened feel of the skin can only be noticed in the very early papular stage and in the late infiltrated stage, and that it is smooth and leathery in the middle stage. As involution occurs, the suppleness and natural glossiness of the skin return, but a diffuse, brownish-yellow pigmentation of mild character is left, accompanied for a time with moderate desquamation. This pigmentation is, in a measure, characteristic of the disease in that it has not the red tinge of a departed eczema, nor the brownish-red hue of a vanished psoriasis. More particularly it differs wholly and radically from that of lichen planus in being uniform in sheets, rather than blotchy, patchy in spots, and in not being of a rusty brown, a brownish-red, or a crimson-red color, which are so constant in the latter affection. In lichen planus pigmentation there is evidence of much quite deep effusion of the red corpuscles; in lichen ruber it is very trifling and superficial.

Finally, I would call particular attention to the condition of the

nails, which are of a dull-white or dirty-yellow color, rough and serrated on their surfaces, and fully four times their normal thickness. It is natural to suppose that a disease the acme of which is seated in the corneous layer of the skin should work a radical change in the nutrition of these kindred appendages. There is no concomitant nail affection in lichen planus.

The foregoing facts, I think, very clearly and forcibly show that in America lichen ruber presents precisely the same clinical characteristics that it does in Germany, with, perhaps, the qualification that it has not been seen here as yet in such an inveterate and deadly form as Hebra first described. I think that it has been shown that the disease has striking peculiarities, and that only in one stage, and that a short one, can it by any possibility be mistaken, at least by a trained clinician, for lichen planus.—*New York Medical Journal, Jan.* 5, 1889, *p.* 2.

76.—ON CASES OF TYPICAL IMPETIGO SIMPLEX.

By Louis A. Duhring, M.D., Professor of Skin Diseases in the University of Pennsylvania.

Considerable scepticism obtains in the minds of some eminent dermatologists concerning the existence of a distinct disease of the skin entitled to the name impetigo. They, for the most part, regard all such manifestations as forms of pustular eczema, as impetigo contagiosa or as lesions due to parasites or to external irritants. Recently, Dr. T. Colcott Fox, of London, in his annual report of the Department for Skin Diseases in the Westminster Hospital, states that he does not recognise impetigo; and that if such an affection does exist, he has doubtless confounded it with impetigo contagiosa. In view of these facts, and that I am quoted by Dr. Fox as advocating the existence of this disease, a brief account of two cases may prove of interest. They may be regarded as typical examples of this dermatosis. Impetigo must be looked upon as one of the rarer cutaneous manifestations, and, it may be added, I have met with but few instances in which the features were so sharply defined as in the present cases. The well-known so-called eczema impetiginosum, as well as impetigo contagiosa and ecthyma, are all, of course, to be excluded. To these diseases I shall refer again.

[Dr. Duhring relates two examples of Impetigo Simplex, only one of which is here reproduced. The notes, it is stated, were made at the date of observation.]

Case.—The first is that of a boy, aged four years, a well-nourished, stout, hearty-looking child. The mother states that he has always heretofore enjoyed excellent health, and that this is the first disease of the skin he has ever shown. It began two weeks ago with slight itching, which was soon followed by "whitish lumps, like hives;" shortly after this yellowish-white lesions—

pustules—appeared, a few at a time, "lasting several days and drying up." They formed rapidly, from three to five days sufficing to arrive at maturity. There were slight feverish symptoms in the beginning, but not any since, although the child is still restless and scratches himself at night. The bowels are somewhat constipated, but the appetite remains good.

At the present time there exist about two dozen lesions, situated mostly upon the fingers, toes and legs. They are typical pustules, and vary in size from small to large split peas. In form they are uniformly semi-globular, or dome-shaped, and are raised about a line above the surrounding healthy skin. In no instance are they either acuminated or umbilicated. They are firm; have thick walls; and are tensely distended. In passing the hand over the surface they can be readily detected as firm, distinctly defined elevations. They are mostly of a pale sulphur-yellow or straw color, but in some instances are whitish-yellow, and are seated upon extensive bright reddish, highly inflammatory, non-indurated bases. They are, moreover, discrete, and manifest no tendency either to aggregate or to group. The regions involved are the neck, arms, hands, hips, thighs, legs and feet. The face and scalp remain free. There is one large and conspicuous lesion on the dorsum of the foot.

The case was seen on several occasions subsequently, the lesions each time showing signs of rapid involution. Crusts, somewhat friable, yellowish in color, formed, and in the course of a few days dropped off, leaving a circumscribed reddened surface or spot, which in a short time disappeared. The process showed itself to be benign and superficial in character, and ran its course in from two to three weeks. No treatment, either local or internal, was employed.

In both of these cases striking pictures are shown, representing a clearly defined, distinctive disease, the lesions being peculiar pustules which cannot be confounded with those of other pustular diseases. They begin as pustules and run their course as such. The process is a simple and benign one; superficial; leaves only a slight pigmentation, which soon passes away; and in both instances cited ran an acute and definite course. The disease is not contagious. It possesses none of the features and characteristics of eczema, the lesions differing in many respects from those of pustular eczema, the "eczema impetiginodes" of older writers. They are discrete, with no disposition to coalesce; are variable in size, for the most part large, the size of a pea, or, occasionally, even a finger nail. They differ from eczematous pustules, moreover, in possessing thick, firm, resisting walls, with no tendency to rupture; or to break down and discharge; finally, in being disseminated and in occupying the general surface with no disposition to localize.

From impetigo contagiosa the lesions differ in being from the

beginning much more distinctly pustular; in having firmer and thicker walls; and in presenting larger and more bulky crusts. The history of contagion is also wanting. It may further be stated, that there is also a marked difference between these lesions and those of simple ecthyma, which are flatter and tend to spread more evidently on the circumference; yellower, showing a more active pyogenic nature; and more hemorrhagic, indicating a debilitated state of the tissues, the subsequent crust being brownish. In looking into the etiology of the two diseases we find impetigo to occur, as a rule, in healthy individuals, and ecthyma in the broken-down or cachectic.

Idiopathic simple impetigo must also be distinguished from those pustular lesions which not infrequently arise as the result of external irritants and from animal parasites. These causes play no part in the form of disease under discussion. The disease which I have endeavoured to illustrate by the two cases just reported, corresponds to the "impetigo sparsa" of Bateman, Wilson, and Hillairet and Gaucher, and others, and in this country has been described by myself, Hyde, Robinson, Buckley and Van Harlingen. —*American Journal of Medical Science, Oct.* 1888, *p.* 374.

77.—ON DERMATITIS TUBEROSA DUE TO THE ADMINISTRATION OF IODINE COMPOUNDS.

By J. Nevins Hyde, M.D., Chicago, Illinois.

[Dr. Nevins Hyde publishes in the *Medical News* for Oct. 13, 1888, two exceedingly interesting examples of a Tuberose Eruption on the Skin, following the administration of Iodine Compounds. We reproduce here in a slightly abbreviated form the account of the first of the cases, with Dr. Hyde's concluding remarks upon iodine rashes generally.]

Case 1.—On the 1st of March, 1888, I was summoned to one of the Chicago hospitals for the purpose of establishing the nature of a disease with which one of its inmates was affected. The patient, A. C., a girl eighteen years of age, was reported to be suffering from leprosy. She was found occupying one of the most secluded rooms in the building, cut off from contact with all outside save the physicians and the Sister in attendance.

She had been brought to the hospital on Feb. 2nd, 1888, on account of some destructive disease of the elbow joint, on which date she was ordered to take three times in the day, teaspoonful doses of a solution, each ounce of which contained one grain of iodine and one drachm of the iodide of potassium. On the third day after this medication was begun, a number of semi-solid papules appeared on the forehead, and two or three on the dorsum of the hands. There was a moderate coryza which led her to think she had "caught cold." By evening of the same day, the

entire scalp and forehead were covered with smaller and larger lesions of the same general character, rapidly increasing in size. On the next morning her hair was cut short on the scalp and a poultice applied. The papules rapidly became large, softish tubercles, covering the scalp and face, closing the eyes, encroaching on the neck, in front and behind, and including the intrascapular region, as well as the forearms and the hands.

Through the entire month of February the same internal medication was pursued, with constant aggravation of the cutaneous disorder, until my visit on the 1st of March. At this time the appearance of the patient was in the highest degree repulsive. The scalp, from which a cloth was removed spread with a salve, was completely covered with closely-packed, pigeon's-egg-sized tubercles, the matted hairs projecting through and between them, all smeared with a puriform mucus, mixed with the fatty basis of the salve. The forehead, temples, cheeks, neck, and back were generally and symmetrically covered with superficially seated, small egg-sized, semi-solid, discrete and confluent, oval, roundish, and irregularly shaped tubercles, of a dull reddish hue, some standing out to the extent of several millimetres prominently from the general surface. Their summit was usually flattish, occasionally fissured and macerated with a mucoid secretion. Many strongly resembled large sized, secreting condylomata. A few presented the appearance of containing boiled sago grains. None were true bullæ, and none when punctured extruded their contents. Some were reported by the nurse as having furnished a profuse, greenish-yellow discharge before they had been cleansed. The forehead, especially the upper portion, was extensively and symmetrically invaded by these rapidly developing nodules, which were closely packed together; the brows and eyelids, particularly upon the right side, were so burdened with the same as to render it difficult to open the eyes. Some had the appearance of an irregular furrow filled with muco-pus at the summit, the general line of this furrow corresponding to the axis of the long, oval-shaped lesion, resembling the sausage-like tumours of mycosis fungoides.

It was almost impossible in the case of the larger of these lesions, so great was their size, to distinguish the individual elements of which they were composed. Some were so marked by lobules and fissures as to suggest that they were compounded of large bean-sized lumps. When incised, pus, blood, serum, and an inspissated, grumous fluid could be expressed from the wound, but the lesions were in no sense chambered. They were evidently masses of softish, vascularised epithelium, secreting superficially a thick, grumous, mucoid fluid, in places commingled with pus. There was little or no subjective sensation produced. The skin of the anterior thorax was scantily invaded. There were two

large compound nodules on the flexor aspect of the right forearm; two also on the left hand; one on the dorsal surface of the web between the first and second metacarpal bones, of the size of a fifty-cent piece; another, small coin-sized, on the dorsum of the left index finger between the distal and middle phalanges. Elsewhere there were no lesions upon the surface of the body. Iodine was detected chemically in the urine.

One of the conspicuous features of this case was the evident failure of correspondence between the eruptive symptoms and the general condition. The patient appeared to be neither weak in body, dejected in mind, nor stricken with any grave malady. She sat up in bed, gave full and intelligent details of her history, laughed heartily over the appearance she presented, and, on the whole, rather made light of her troubles. The remedies she was then taking were ordered discontinued, and she was given merely a ferruginous tonic. The result was a prompt and rapid disappearance of the exanthem. So rapid, indeed, was the subsequent process of involution that even though but two days elapsed before a portrait of the patient's face in oil could be made, a decided subsidence of the tumefaction occurred, and the colour of the lesions became markedly less vivid.

The eruption, as it subsided, left distinctly circumscribed, dull red infiltrations, in patches covered with light and dark crusts superimposed upon the secreting surface. Here and there a slight and superficial atrophy of the skin in patches resulted. Two superficial ulcers formed on the back, doubtless as the result of the unavoidable pressure in a recumbent position. At no time were there evidences of general ill health. When the spiculum of bone was removed from the fistulous orifice in the neighbourhood of the right elbow-joint, the parts healed without difficulty. In the site of a few of the larger lesions there was a distinct superficial cicatrisation. The most characteristic of these scars was seen on the dorsum of the left hand. Here was one as large as a fifty-cent piece, circular in outline, and very slightly raised above the general level of the skin.

In two months after the discontinuance of the iodide, there were no skin lesions visible, beyond the pigmentation of the slightly infiltrated skin in the situation of the previous exanthem. In two weeks more the drug was again administered in precisely the same dose as before. The eruption again promptly appeared over the scalp and forehead. Unfortunately, the surgeon, under whose direction this test was, at my suggestion, made, left the city soon after ordering the readministration of the remedy, and, as a consequence, more than a week elapsed before the medication could be stopped a second time. During this interval a serious and disfiguring second crop of molluscoid lesions appeared over the forehead, which happened to be neglected in the hot month of mid-

summer, and, as they secreted mucus very freely, they brought the patient into a condition which was almost as serious as that which had preceded, and which might certainly have been avoided. After this she returned to her country home, the relapsing tubercles rapidly shrinking in consequence of a final suspension of the drug.

Enough is now known of this special form of medicamentous dermatitis to warrant the following conclusions :—

1st. When the iodine compounds, irrespective of the size of the dose, have been administered to well-nourished infants, children, and persons whose skins are in the condition usually found at these ages, a quasi-bullous rash may gradually appear, whose elements differ from the blebs which occasionally form when the drug has been administered to older persons, syphilitic, cachectic, or in grave conditions of prostration.

2nd. The interest attaching to the recognition of the nature of the eruption is partly due to the fact that in the class named it may be superimposed upon an eczematous or seborrhœic condition, for which the iodide has been administered.

3rd. The regions invaded are almost exclusively the scalp, face, neck, upper chest, forearm, and hand.

4th. The subjective sensations experienced when the lesions are copiously developed are comparatively insignificant, and the disproportion between the disfigurement produced by the enormous cutaneous nodules and the generally fair condition of the patient is often of the highest diagnostic significance. The lesions are, strictly speaking, neither vesicles, bullæ, pustules, carbuncles, abscesses, nor papules. They are softish, semi-solid, roundish, oval or irregularly shaped tubercles, resembling mollusca and condylomata, flattened or umbilicated, or seamed and furrowed at the summit. They may be isolated and bean-sized, or agglomerated in patches as large as the palm. Whether they have grumous or sago-grain-like contents, or are filled with blood or serum, they secrete, like condylomata, over the free surface, and when covered with light-coloured mucoid crusts these are usually furnished by the desiccation of the secretion named, and not by exudation and subsequent drying of the contents of the lesion. In color they are light reddish, dull purplish-red, or violaceous, and are usually well projected from the surface of the skin, being rarely subcutaneous in situation.

5th. Involution commonly progresses rapidly after the suspension of the drug, and is very rarely followed by circular, oval, faintly defined, and irregular cicatriform patches, in which the skin is left in an atrophic condition, not distorted or puckered.

These scar-like patches have thus far been studied only in the recent condition; and their condition and appearance after any prolonged period of time cannot now be determined.—*Philadelphia Medical News, Oct.* 13, 1888, *p.* 411.

AFFECTIONS OF THE EYE AND EAR.

78.—ON THE REMOTE EFFECTS OF SUPPURATIVE OTITIS.

By Sir Dyce Duckworth, M.D., Physician to St. Bartholomew's Hospital, London.

[The clinical lecture from which this excerpt is taken deals mainly with the general pyæmic conditions resulting from suppurative otitis. The records of five illustrative cases are given, of which the headings only are here reproduced.]

Case 1.—Female, æt. 18. Had suffered for some time from purulent middle ear disease. Admitted with high temperature and severe diarrhœa, leading to a suspicion of typhoid fever. Post-mortem it was found that purulent infection had spread from the ear, and led to pyæmic and gangrenous pulmonary abscesses.

Case 2.—Female, æt. 32. She had always been deaf in the left ear, and had had a gathering there. On admission there was high fever, optic neuritis, and great pain in the course of the left internal jugular vein. Post-mortem, the left lateral sinus was occupied by a soft fœtid suppurating clot, continuous with a similar clot in the jugular vein, which passed right down to its termination. There was no abscess or softening of the brain substance. In the lungs were several small embolic abscesses. The spleen weighed 11 ounces.

Case 3.—Female, æt. 18. In this case the patient recovered from what was diagnosed to be "septicæmia, with pleural, peri-"cardial, and peritoneal inflammation, the whole resulting from a "neglected infecting otitis media."

Case 4.—Female, æt. 8. This case also recovered. The chief manifestations were epileptiform convulsions and vomiting.

Case 5.—A fatal case, occurring in a woman æt. 20. The order of events was the usual one. Retained secretion had occurred in the middle ear and mastoid cells, due to an inflammatory catarrhal exacerbation. A clot formed in the lateral sinus, and doubtless became septical. From this periodic discharges of pyæmic virus into the system by way of the venous circulation, pulmonary abscess, pleural effusion, and double empyema.

In these cases, all of which occurred in females, mostly young, you have exemplified some of the most noteworthy remote results of otitis. Their histories illustrate the extreme danger which hovers around patients the subjects of this complaint. You may note that the dangerous symptoms may arise under the two following conditions. First, they may supervene early, soon after acute purulent catarrh of the middle ear has occurred, with perforation of the tympanic membrane; or, secondly, they may set in just as suddenly in cases of long-standing purulent catarrh of this part, where discharge has gone on for perhaps many years. In the

latter cases there is commonly caries of the temporal bone and loss of the ossicula. The lessons to be learnt are that, as I have previously observed, patients of the latter class carry their lives in their hands. They are liable, under trifling provocation, to a sudden and serious attack of illness, which may be very far-reaching and readily fatal. The first untoward symptom is a stoppage of the accustomed discharge; then pain ensues; next, perhaps, vomiting, rigors, pyrexia, and a typhoid or putrid state of system—blood-poisoning, in fact. What happens is, septical contamination of the blood with the putrid contents of the tympanic cavity, almost certainly by way of the veins opening into the sinuses of the dura mater. The anatomical arrangements render such contamination very certain and direct, either by way of the external meatus or of the middle ear. Hence, there is often found puriform thrombosis of the lateral sinus or of the petrosal sinuses, leading directly into the internal jugular vein, as in our second and fifth cases. Thence it is easy to follow the morbid processes on to the right heart and the pulmonary arterial circulation, with the development of diffused pyæmic and often gangrenous abscesses in the lungs. With such sepsis we look for more general impregnation of the system, and thus meet with splenic enlargement, hepatic abscesses, or pyæmic arthritis. Again, abscesses in the brain or cerebellum may result directly from the ear trouble, with or without the intervention of meningitis, and these are more often due to this than to any other cause. The temporo-sphenoidal lobe is the common site of abscess. When the mastoid cells are implicated, the cerebellum is the usual seat; and this is more common in children, owing to the relations of the parts in early life. You know that in ordinary pyæmia it is rare to meet with abscesses in the brain, and you know that a cerebral abscess is often not diagnosed during life. It may exist and give no plain tokens of its presence till some sudden explosive symptoms arise, and rupture occurs into the meninges, or into the ventricles, leading to rapidly fatal issue. Cerebral abscess would perhaps be more commonly induced if these patients lived longer. The points in these cases I would bid you to take note of are—the recurring rigors and fitful pyrexia, at times mimicking attacks of true malarial ague, the symptoms at one time being indicative of pneumonia, at another of enteric fever, diarrhœa with ochry stools being very common. You have seen how pericarditis and peritonitis may supervene as part of the septicæmia. You must therefore be wary and summon all your clinical acumen to follow out and interpret the true nature of the particular case, remembering that the ear mischief is the *fons et origo malorum.*

Preventive medicine, then, warns you to treat no case of otorrhœa as a simple matter. Seek the cause and determine the locality of the discharge. Keep the ear clean with frequent anti-

septic washings, and encourage the outlet of all festering stuff. Leeches to the front or back of the ear may be necessary at times if symptoms of fresh otitis arise. In any obscure cases of septicæmia you will do well to examine the ears and to smell the meatus. No more forget to do this than you would neglect to look for hernia in any given case of obstruction of the bowels, and you will not unfrequently find the clue to your difficulties. The secretions of the middle ear may be pent up mechanically, and so lead to absorption and mischief. Hence, the necessity of constant attention, out-washing, and cleanliness in these cases of purulent otitis. Measles and scarlet fever are the chief provoking causes of severe otitis, but it may be years afterwards that a neglected ear discharge suddenly becomes of perilous importance. The first case that impressed this matter upon my attention was that of a barrister I was called to see when sinking from purulent thrombosis and general pyæmia. He had had ear disease of long standing. He went on a yachting cruise that summer, and took each morning a plunge in the sea from the side of the yacht. The discharge from his ear ceased, severe headache came on, and his life was at once in danger. Nothing could save him. Such persons should never dive or bathe in open waters; and, even in ordinary ablutions, no one, I consider, with sound ears should fill their meatus with water. This practice is sometimes recommended by the laity in order to fortify the organs of hearing. Sufficient cleansing can always be secured with the corner of a damp towel. The details of treatment for otitis I leave for the aural surgeon to teach you. For the treatment of symptoms of neglected otitis due to septical impregnation, I fear I can tell you but little that is encouraging.

In two of our cases which recovered, assiduous washing with antiseptic lotions was practised. The pyrexia we treated by quinine in doses of forty grains daily with opium, more or less, according to circumstances. Cerebral vomiting at the onset of meningitis yields best to calomel purgation, and bromide of potassium in full doses is certainly indicated here, the more so if epileptiform convulsions supervene. Good nourishment and stimulants are needed for the typhoid or putrid state. When the mastoid cells are involved, as evidenced by pain and tumidity over the mastoid process, the surgeon will decide whether to puncture or trephine the bone. This was done by Mr. Walsham in a case from which I am sorry to show you this dry specimen of a temporal bone, and of which I need not specify the result. Early perforation may, however, sometimes save life, even if a large part of the temporal bone becomes carious and demands removal. The operation is of course useless unless the mastoid cells are involved. The moral of this lecture, however, is *early detection of the cause and site of the ear mischief*, and my last injunction is to urge you to treat this diligently on general principles till you are satisfied that it is

allayed. Failing to accomplish this, you must warn your patient of the perilous risk he runs if constant attention and cleanliness be not practised.—*Lancet, Jan.* 5, 1889, *p.* 5.

79.—ON OCULAR HEADACHES.

By Walter H. Jessop, M.B., F.R.C.S.

The occurrence in my practice during the last four years of more than 400 cases of headache associated with and completely or partially dependent on ocular errors, has induced me to state briefly in this paper the chief points of interest in these cases, especially as regards their diagnosis and treatment. The association of headaches with ocular troubles has been pointed out by Lauder Brunton, Tweedy, Brailey, Higgens, Carter, &c. In this paper I intend to treat solely of those headaches which are due to refraction errors or troubles connected with the intra- or extra-ocular muscles, and not to mention those dependent only on such pathological conditions as glaucoma, herpes ophthalmicus, &c.

It may seem strange that so few patients suffering from errors of refraction who consult an oculist complain of headache as a leading symptom, but this is simply due to the fact that the association of headaches with refraction errors is not suspected by the patient. If the oculist ask his refraction patients whether they suffer from headache, he will find numbers in which the symptom is present. In children especially, the occurrence of headaches ought to make one suspect a refraction error. The position of the headache is varied, but it is generally in the territory of the fifth pair of nerves, which is what might be expected from the fact that the intra- and extra-ocular muscles receive their sensory nerve supply from this nerve. The most frequent seat is along the ophthalmic or first division of the fifth, giving rise to frontal headache; temporal and vertical headaches are the next most common; and occipital headache the least frequent. Besides headaches the different neuralgias along the branches of the fifth nerve are associated with refraction errors, namely supra-orbital, supra-trochlear, nasal, lacrimal, and rarely infra-orbital; the neuralgia may be one-sided or bilateral. If it be unilateral it is generally on the side of greatest error of refraction; and in some cases there may be all the severe symptoms of megrim. In rare cases the headache may be general, or varying as to its site, and may give rise to symptoms of cerebral irritation and disturbance, as in a case detailed afterwards and another mentioned by Carter. It must be always borne in mind that some patients suffer from several varieties of headaches; one of my patients described four different classes of headaches and neuralgias from which he suffered, and of these two only were alleviated by glasses.

The ocular headache as a rule is most noticed when the patient

is out of health or over-wearied; hence in many cases cessation of work has been tried with success by the patient, and overwork alone is then credited with the trouble. Lauder Brunton has well described a headache as the product of two factors, namely local irritation and general condition; and excess of the irritation or lowering of the general tone of the patient are the two common causes of headaches. So in ocular headaches the bracing up of the general condition greatly allays, if it does not cure them; the same result is also achieved by the removal of the exciting cause, such as reading, writing, &c.

Following this reasoning it must be remembered that, especially in adults, the patient comes, as a rule, when the system is lowered and the headaches troublesome, and therefore the oculist must be careful not to order too strong glasses, or to correct completely at first an insufficiency of convergence by prisms or operative procedure, as a course of iron, &c., often altogether upsets his calculation. The ciliary muscle, and more especially the convergence power of the eyes, can be often greatly strengthened and improved in such cases by proper tonics. Several of my cases are students, who at school were kept in health by plenty of exercise, and never experienced any trouble with their eyes; but a more sedentary life, while reading for an examination, &c., upset their tone and soon demonstrated a latent error of refraction or convergence.

The error of refraction most commonly associated with headaches is hyperopia, especially in children, and great care is necessary in its estimation, owing to spasm of the ciliary muscle masking the amount, and in many cases producing an apparent myopia. The next most common cause is astigmatism, comprising all the different kinds of simple, compound, and mixed; Brailey has especially well described these forms. Myopia is a much rarer cause, but in some cases there may be a spasm of the ciliary muscle making the apparent myopia too great; and in such doubtful cases, as in hyperopia, atropine must sometimes be employed. Anisometropia often induces headache, and especially megrim. Spasm of the ciliary muscle, inducing spasm of accommodation, is a fertile source of headache, especially in children and young adults, and I have seen even at the age of forty a spasm of four dioptres. The spasm may be in part only of the muscle, and thus may induce astigmatism, or in some cases may correct a corneal astigmatism. Paresis of the ciliary muscle, due to deficient tone of the muscle, as in anæmia, &c., or actual palsy of the muscle, as in diphtheria, may give rise to headaches; and though glasses will prevent them for a time the patient generally gives the glasses up on the anæmia or other debilitating condition disappearing under tonics.

Besides the before-mentioned causes the extrinsic ocular muscular system is often defective in cases of ocular headaches, generally in combination with an error of refraction, &c., but

sometimes it is alone at fault. The most common error is insufficiency of convergence power, due to weakness of the adductors, generally binocular and equal, but sometimes more marked in one eye: this insufficiency of convergence may in rare cases be due to increased power of the abductors. Insufficiency of the abductors may give rise to too great convergence, or this result may follow from too great power of the abductors.—*Practitioner, Oct. p.* 274.

80.—INFLUENCE OF COCAINE ON OPHTHALMIC SURGERY.

By Samuel Theobald, M.D., Baltimore.

The anæsthetic properties of cocaine had not long been discovered, and its use in ophthalmic practice become of common occurrence, before there began to appear in the medical journals reports of cases in which it was accused of causing panophthalmitis and other unfavorable results in eye operations. These reports naturally attracted much attention, and at first excited some misgivings in the minds of those who were experimenting with the new agent. So rapidly, however, did testimony in its favor accumulate, that it was but a few months before its position was assured, and it was admitted upon every hand that to ophthalmic surgery, at least, the discovery of the anæsthetic action of cocaine was of inestimable value. Its peculiar effect in causing anæmia of the conjunctiva and in hardening and drying the cornea seemed to suggest that in such operations as extraction of cataract its use might interfere with the healing process, but abundant evidence was soon forthcoming to show that there was but little danger to be apprehended from this source, and that what little there was was more than offset by the elimination of other risks, such as those attending the administration of chloroform and ether. And so it soon came about that the efficiency and safety of cocaine as a local anæsthetic in ophthalmic surgery was no longer a question open to dispute.

Like every other therapeutic agent, however, cocaine is not all that we could wish it to be, but has its defects and shortcomings. In cataract extraction, for example, while it does away with the risks and inconveniences which attend the employment of general anæsthetics, it renders the cornea so tough and hard that the making of the section through its periphery becomes decidedly more difficult. Indeed, it is sometimes no easy matter, after several instillations of cocaine, even to pinch up a fold of the conjunctiva with the fixation forceps, so closely does this membrane hug the underlying sclera. For the same reason the operations for squint, more especially those which are done sub-conjunctivally are rendered less easy of performance. Perhaps, too, the fact that the muscle to be divided is apt to be in a state of tension instead of being quiescent, as in general anæsthesia, has something to do with

the difficulty. However this may be, the difference is very marked, as one finds when, after making a number of tenotomies under cocaine, he has occasion, perhaps in a young child, to perform one under the influence of chloroform.

One of the most marked differences which the employment of cocaine in eye surgery has brought about is that it has rendered the operator comparatively independent of assistants. This is so, not only because the administration of a general anæsthetic is obviated, but because the patient, being conscious during the operation, is himself able to facilitate the manipulations of the surgeon. In most instances the application of cocaine does not render entirely painless the operation of iridectomy, the seizing, dragging, and cutting of the iris being attended by more or less suffering. The services of an assistant may not be dispensed with, therefore, when this operation is to be performed, as the patient cannot usually be relied upon to control the movements of his eye.

In the extraction of cataract under cocaine, the making of the iridectomy, in accordance with the method of Graefe, is in most instances the only part of the operation which is at all painful. Do away with the excision of the iris, and the operation is entirely painless. In this fact, and in the further one that with the elimination of the risk of nausea and vomiting occurring the danger of prolapse of the iris is greatly diminished, lies the explanation, as has been pointed out, of the growing tendency among ophthalmic surgeons at the present time to return to the simpler form of cataract extraction, without iridectomy.

Still another example of the modifying influence which cocaine has exerted upon ophthalmic surgical procedures, is to be seen in the disposition shown of late to substitute strips of adhesive plaster for compresses and bandages as a means of closing the eyes after delicate operations, such as iridectomy and cataract extraction. Although the obvious advantages of this simple method of after-dressing were long since pointed out, but few operators were willing to employ it, because the protection from accidents which it afforded the eye during the stage of recovery from chloroform and ether anæsthesia was not as great as with the compress and bandage. The substitution of local for general anæsthesia having eliminated in a great measure the liability to such accidents, the protection and support of compresses and bandages are no longer so necessary, and as a consequence we find the plaster strip coming into more general favour.

Reference has been made to the fact that the hardening of the cornea, and the drying and tightening of the conjunctiva which accompany cocaine anæsthesia, render more difficult the making of the corneal section in cataract extraction and the division of the tendon in operations for squint. To offset this, however, there

is the great advantage that the consciousness of the patient enables the surgeon to test the vision in the former operation and the position of the eyes in the latter, which with chloroform or ether was, of course, impossible.

The substitution of cocaine for atropia, duboisia and homatropia, as a paralyzer of the accommodation in testing errors of refraction, has been recommended, because of the evanescent character of its action upon the pupil and ciliary muscle. It should not be employed for this purpose, however, as, in the first place, it does not produce a sufficiently profound paralysis of the accommodation, and, in the second place, the drying of the corneal epithelium which it causes is accompanied by more or less marked irregular astigmatism, which, necessarily, makes accurate measurements impossible.

One of the many valuable uses to which cocaine is put is in relieving the pain that such agents as sulphate of copper and nitrate of silver produce when applied to the eyes. In the treatment of granular lids, especially, this use of cocaine is a great boon to patients, who now no longer dread the repeated applications of these severe remedies as they formerly did. In the treatment of nasal duct strictures, also, cocaine is of great value, for it renders very tolerable, although not entirely painless, the frequent probings which are commonly required in these cases.

Useful as it is, the efficiency of cocaine in ophthalmic surgery has its limits, and chloroform or ether has occasionally to be employed. The pain of many operations upon the lids is reduced to a degree which may be easily borne by the free application of cocaine to both their conjunctival and dermal surfaces; but the anæsthesia which it induces is not such as to justify its employment in enucleation of the eye; and in delicate operations upon young children, chloroform is still, and probably will continue to be, our chief reliance.—*Transactions of the Med.-Chir. Faculty of Maryland, April* 1888, *p.* 196.

81.—ON THE DANGERS OF SEPTIC INFECTION ARISING FROM NASAL AND AURAL DISCHARGES IN MIDWIFERY AND SURGICAL PRACTICE.

By H. Bendelack Hewetson, Surgeon to the Ophthalmic and Aural Departments of the General Infirmary, Leeds.

Some little time ago attention was drawn by Sir Spencer Wells, I believe, to the case of a now celebrated ovariotomist, who, despite all his constant care and watchfulness, continually found his operations followed quickly by a fatal result. I think it was suggested to him that this fatality might arise from some personal condition, and at length, on application to a skilful dentist, a suppurating molar tooth, which was removed, revealed the cause

of the fatality, and with the removal his success began. Dr. Matthews Duncan has also quoted one or two cases of medical men suffering from some form of rhinorrhœa, whose attendance in the lying-in chamber was particularly disastrous to their patients. But I do not think that sufficient stress has yet been laid on this very broad question, as a whole, in regard to septic infection generally. Everyone in Leeds remembers the case often quoted, in which three leading members of the profession several years ago attended the post-mortem examination of a case of peritonitis, and each afterwards within the next twenty-four hours attended a labour, with a fatal puerperal fever in each instance. My attention has recently been very seriously drawn to the great danger which attends the parturient patients of those who are the subjects of even a slight otorrhœa, or in whom there is some nasal discharge of an offensive nature. The opportunity of bringing the facts before the Leeds and West Riding Medico-Chirurgical Society has been gladly accorded to me by the practitioners whose ailments I have treated, and will form the subjects of this paper.

Some time since I was consulted by a medical man for an affection of the left ear. He heard badly on that side, and suffered from great depression of spirits; he was pale and anxious-looking (though naturally he was bright, cheerful, and energetic), and spoke despondingly of his future and his position. I found that there was a small perforation of the membrana tympani, and a thick semi-solid discharge lay on the floor of the meatus, but never appeared externally; but it was, when disturbed, horribly offensive. He told me that, in order to find out the cause of his unexplained ill-health, he had had all his drains overhauled, and also had had the drinking water looked to, with negative results. *I at once explained to him that the cesspool in his case was in his ear,* and that probably in a short time a course of antiseptic treatment would neutralise the chronic absorption of the septic material, which was so exceedingly depressing to him, and cure his symptoms. I asked him if he was aware of the otorrhœa, and he assured me that the deafness was the only thing which troubled him. I was exceedingly anxious to learn from him the results of his large midwifery practice, and with carefully weighed words I approached the subject. This ended in an exceedingly painful expression of feeling, which I need not dwell upon. Suffice it to say that his misfortunes in this department from puerperal septicæmia were very constant, and also that many who recovered only did so after passing evidently through an attack of septicæmia. It was at once evident to him that his ear trouble, which constantly caused irritation and consequent—often unconscious—scratching for relief, was the obvious cause of much of the puerperal trouble which he related to me. The treatment which we

adopted very quickly set matters to rights, and I am glad to say that, though he was obliged to change his practice, he has done exceedingly well in midwifery practice ever since. His health also quickly returned. I may add that it is his expressed wish that these notes should appear in this form before the Society.

The second case which I have to report in support of this subject occurred in the practice of a medical friend of mine, and it was the quoting of the above case in conversation to him which suddenly threw light on a case of puerperal fever which ended fatally in his practice the week before. The facts are these :—My friend had engaged a qualified assistant, and, being called away, the assistant was sent to an important midwifery engagement some distance off, and all went well until the end of the third day after delivery. Puerperal fever set in, with a rapidly fatal termination. I was asked to examine the assistant, and I found that he suffered from tertiary syphilis, disease of the nasal septum, with a most offensive discharge, and foul breath. He was obviously a danger to any lying-in woman, and I advised that he should be completely rid of his trouble before he again played his part in general practice.

These cases point strongly also to the possibility of nurses suffering from aural or nasal discharges being the media of infection. I have seen three instances of hospital nurses working constantly amongst the most important surgical cases, quite innocent of the fact, until told them, that they were standing dangers to the cases under their charge. In each instance they were removed from active work until the otorrhœa had ceased. I am exceedingly glad to have been able, as it were, to dovetail this paper into the list of papers before us to-night on antiseptic midwifery, for, however dangerous such conditions may be when occurring in association with general surgery, the increase of danger must be much enhanced when in relation to the actively absorbent conditions of the puerperal state.—*Lancet, Nov.* 24, 1888, *p.* 1015.

Midwifery

AND

THE DISEASES OF WOMEN, ETC.

82.—ON THE PREVENTIVE TREATMENT OF INTRA-UTERINE DEATH.

By Professor Simpson, Edinburgh.

[The following excerpt forms the conclusion of an important address delivered by Professor Simpson, at the Meeting of the British Medical Association at Glasgow, 1888.]

When in our obstetrical practice we have a patient giving birth to a series of still-born children, our first aim is to determine whether she be the subject of any constitutional diathesis, or, where she seems to be healthy, whether there be any such indications on the part of the fœtus. In a large proportion of cases there will be syphilitic manifestations more or less distinct. In giving the proportion of 83 per cent. as the result of his own investigations, Carl Ruge is probably not far off the average mark. In such patients we may hold out the hope that with the lapse of years matters will improve. If the wife, as is commonly the case, had been previously healthy, and the husband can be persuaded to let the uterus remain at rest until in process of time the virus in him has lessened in its intensity and the tertiary symptoms have disappeared, it may become possible for him to impregnate a healthy ovum that will develop and be carried to the full term. But it should be remembered that, even where the tertiary stage has been reached, we can give no certainty of healthy procreation to a man once constitutionally syphilitic, and the most hopeful results are to be obtained by the enforcement of anti-syphilitic treatment.

I fix attention on the marital syphilis because in at least four cases out of five it is the husband who brings this miserable endowment into the marriage contract, and because it is sentimentally cruel and scientifically stupid to make the wife the subject of our efforts to counteract the effects of the poison in her person while nothing is done to neutralise it in him who at each fresh conception is infecting her anew. Mercury in its various preparations has too often been introduced into the system of pregnant women, to the detriment of their constitution, when it might have been administered with the happiest consequences to the husband. Only after his system has been sterilised as well as hers by the lengthened use of the protiodide or other salt of mercury in regulated doses should she be exposed to the chance of a fresh conception ; and, when conception has taken place, the use of the mercurial once or

twice a day in small tonic doses should be continued far into or throughout the pregnancy. The administration of iodide of potassium may occasionally accompany or succeed the mercury, and the waters of Aix-les-Bains, Ems, and Kissingen have sometimes been useful, especially where there remains a tendency to uterine inflammations in a patient in whom the syphilitic taint has been otherwise counteracted.

As regards other constitutional conditions, it is equally clear that we must use the resources of our art to remedy them. The anæmic patient must take iron during her pregnancy, and she will sometimes do well to take arsenic in small doses along with it. The patient with albuminuria should be dieted with milk, and in her also the use of iron is often serviceable. In such patients, as well as in those affected with cardiac difficulties, the iron may be given along with digitalis, or with strophanthus, which is an excellent substitute for digitalis in the cardiac complications of pregnancy.

Where the placental disease is traceable to chronic inflammatory processes in the uterus, care must be taken to secure complete involution after the dead child has been born, and it may be necessary, before another fertilised ovum is allowed to lodge in the uterus, to make some applications to the endometrium, or let the patient have a course of the waters of Ems, Karlsbad, Kreuznach, or Kissingen.

When we have done all that we can in the way of eliminating diathetic mischiefs, and building up the patient's system and restoring the uterus to health, we ask whether there be any means of promoting the placental functions in cases where there is reason to apprehend disease or degeneration in that organ. Perhaps various substances may prove useful in this direction, but as yet the only drug that has given quite satisfactory results is the chlorate of potass. The idea under which it was first administered, that this richly oxygenous salt would part with its oxygen to the fœtal blood, and so supplement the respiratory action in the impaired conditions of the placenta, has long been given up. A dose of twenty grains passes within about twenty-four hours out of the system, and can be obtained almost in its entirety in the patient's urine. But observation has abundantly confirmed the importance of its full and continuous administration, in enabling patients with placental weakness to carry their infants on to viability or to full development. It should be given in doses of fifteen or twenty grains every six or eight hours, so that there may always be some of the salt in the circulating fluid. Its use should be begun as early in pregnancy as at the third month, and it should be continued up to the hour of the infant's birth.

Our final resource in certain cases is to induce labour after the period of viability is passed, and when a fœtus is nearing the stage of development at which its uterine predecessor perished, or when by

the stethoscope we detect the signs of impending danger. The hint is often given us by what is seen to take place naturally. In the cases especially of the placental apoplexies, the blood extravasation sometimes produces such a degree of separation of the membranes and placenta that uterine activity is set up. We can most safely imitate the natural process by having recourse to the use of hot vaginal douches. When the period of viability is passed, the douche may be employed with water moderately warm for short periods twice a day, with the result that the uterus will simply be stimulated to healthy tonicity of action. Then, as the period of danger approaches, the douche should be used more frequently, for greater lengths of time, and with water raised to a higher temperature (110° to 120° F.) If uterine action remain too long in abeyance, it may be started by the introduction of a gum-elastic bougie, carried up for six, eight, or ten inches into the cavity of the uterus, between its walls and the membrane of the ovum. Introduce the bougie in such a case at bed-time and leave it there, and in the morning you may expect to be called to assist at the delivery of—happily— a living and life-like infant.—*British Med. Journal, Oct.* 20, 1888, *p.* 868.

83.—ON OBSTRUCTIVE DYSMENORRHŒA AND STERILITY.

By J. Halliday Croom, M.D., F.R.C.P.E., Physician to the Royal Infirmary, Edinburgh.

I regard dysmenorrhœa as mainly due to some hyperæmic conditions of the endometrium or Fallopian tubes or ovaries. To use the term obstructive dysmenorrhœa is a misnomer. I regard the term as misleading; and so far as the pain of menstruation is due to some obstruction to the flow of the menstrual discharge, I believe it to be non-existent. Let us look, for example, at the ordinary varieties of dysmenorrhœa, and we shall see that congestion characterises them all. First, there are those which are simply diathetic, due to gout and rheumatism, or which are purely neurotic in their origin. That these form a large class of dysmenorrhœas there can be no reasonable doubt. How else account for the persistence of dysmenorrhœa in members of the same family? How else account for the persistence of sterility associated with dysmenorrhœa in members of the same family? I have frequently seen large families of daughters all dysmenorrhœic and sterile. Now in this case I believe that the dysmenorrhœa was due to gouty or rheumatic inflammation of the endometrium, along with resulting spasm of the os uteri internum, and that the sterility was due, not to interference with conception, but rather to the congested mucous membrane forming a bad nidus for gestation.

Again, take the question of membranous dysmenorrhœa, which

is uniformly associated with sterility: it will scarcely be denied that this is inflammatory in its origin; and if the views advocated by Kundrat and Engelman be correct, this is merely an exaggerated form of normal process due to endometritis. With regard to the ovarian and tubal form, it also is unquestionably congestive in its essence. In this form the pain is usually pre-menstrual, and often relieved after the menstrual flow is developed. The explanation of this is not far to seek: take a case of salpingo ovaritis, either specific or simple. The organs are chronically inflamed and congested, pelvic pain is constantly present, but gradually grows worse towards the menstrual epoch, as the organs become more and more congested, with corresponding relief after the discharge is established, displaying, therefore, that the flow relieves the vascular tension, and thus lessens the pressure on the sensitive ovaries, tubes, or peri-uterine tissue.

When we come now to the variety called obstructive dysmenorrhœa, and which forms the title of the discussion, I feel inclined to discard it altogether, and to regard all such forms of dysmenorrhœa as due entirely either to non-development of the uterus or some change in the endometrium, or both. No doubt associated with dysmenorrhœa there are to be found frequent deviations in the size, shape, and position of the uterus. For example, the uterus may be small with a conical cervix. The dysmenorrhœa here will be due to an imperfectly developed uterus imperfectly performing its function. In like manner, in the case of an acute anteflexion, so often found in nulliparous women, the dysmenorrhœa is due partly to an imperfectly developed uterus and partly to a hyperæmic condition of the endometrium. Again, in cases of retroflexion the dysmenorrhœa is mainly due to a congested condition of the endometrium brought about no doubt in great part from an alteration in the circulation due to the flexion.

It seems to me, therefore, that displacements, flexions, versions, although they are unquestionably associated with dysmenorrhœa, yet are not in themselves the cause of it—that the cause is to be found essentially in a hyperæmic, hyperæsthetic condition of the endometrium.

With regard to the relation existing between dysmenorrhœa and sterility, this has been frequently enough observed, "We know that disordered function is always dependent on structural change." It is by no means ascertained what the exact relationship is which exists between them. In many cases it is entirely accidental. As far as I am able to judge, the association of dysmenorrhœa with sterility is not so pronounced as is generally supposed. Kehrer, who has gone into this matter at some length, has shown that a history of painful menstruation before marriage was only slightly more common in sterile than fertile women.

Kammerer, in the *Transactions of the New York Academy of Medicine*, gives a table of 408 cases of sterility in which dysmenorrhœa was a prominent symptom in 67. Jackson gives a table of 72 cases of sterility in which dysmenorrhœa was a prominent symptom in 16. Certainly, looking over my own experience, I should not be inclined to give dysmenorrhœa a prominent place in relation to sterility. Obstructive dysmenorrhœa, putting the term conversely, and regarding various conditions of the uterus as obstacles to conception, scarcely appears to me to have any foundation—in fact, as Jackson says, "The obstacles which are overcome by spermatozoa in their progress towards the uterine cavity are, to say the least, remarkable." Bozeman relates a case occurring in his own practice "in which there was a continuous flow of urine through the os arising from a vesico-utero-cervical fistula. Notwithstanding this adverse current, they reached their destination in the cavity of the uterus, and conception, gestation, and safe delivery followed."

Simon relates "a case in which a vesico-vaginal fistula complicated with stenosis of the vagina had been operated on for incontinence of urine by closing the mouth of the vagina about half an inch behind the meatus urinarius. The operation was so nearly successful that an opening only the size of a cambric needle was left. Strangely enough, the spermatozoa passed through this minute orifice, traversed the stenosed vagina which was then the receptacle of the urine from the bladder, and made their entrance through the os uteri into the cavity of the organ. Conception and gestation followed, but the woman died." And most of us must be acquainted with cases where, notwithstanding a small external os, impregnation and gestation have followed.

The view which commends itself to me is that in cases of dysmenorrhœa associated with sterility, the explanation of both conditions is to be sought for rather in general congestion of the pelvic organs, more especially of the endometrium, than in any mechanical cause. The dysmenorrhœa is accounted for by a hyperæsthetic condition of the uterus brought about by hyperæmia, and the sterility seems to be explained not by any mechanical interference with conception, but rather to some condition of the endometrium interfering with the continuance of gestation. In other words, the dysmenorrhœa is due to congestion of the uterus associated with spasm of the os uteri internum, and the sterility to a hyperæmic condition of the endometrium.

Such a view as this explains how it is that, after treating various conditions of apparent mechanical obstruction, such as anteflexion, stenosis, and so on, the sterility remains unaffected. A very large number, no doubt, of the processes concerned in generation are wholly mechanical, and it is therefore not sur-

prising that in cases of sterility presenting some apparent obstacle of a physical character this condition should be promptly accepted as the efficient cause, and mechanical means should be resorted to for its relief. It is certain that the cure of an anteflexion or a retroflexion, or in other words the removal of the apparent mechanical causes, has resulted in the cure of dysmenorrhœa, and we have learned clinically that it has sometimes been followed by a pregnancy. Far oftener, however, these mechanical means, while relieving the dysmenorrhœa, have failed entirely to remove the sterility; failed, no doubt, because they did not remove some condition other than the mere narrowing of the cervical canal, which condition seems to me to be a morbidly hyperæmic condition of the endometrium, rendering the grafting of the ovule an impossibility.

Such women become frequently enough pregnant, but their pregnancy ends in a menstrual miscarriage. Even in those cases in which conception has followed the use of surgical means for enlarging a narrow cervix or straightening a flexion, it does not at all prove that the conception was the result of mere enlargement of the passage. For whether this operation be performed by cutting or stretching, something more is effected than the mere increase of the lumen of the tube. "Such an operation, if conducted properly with the adjuncts of hot douching, purgation, and so forth, produces a distinct effect upon the congested endometrium, and I have myself no doubt that such operations, so far as sterility is concerned, do more to promote pregnancy by relieving long-standing congestion and inflammation, which have hitherto prevented the uterus from receiving and nourishing the ovum, than by any mechanical aid."

Such is the view as to the nature of the condition under consideration. The treatment, therefore, consists in removing the cause of the dysmenorrhœa, namely, the congestion, by means of careful attention to the condition of the bowels, which in nineteen cases out of twenty require careful regulation. I always avoid the use of opium, chloral, and alcohol, as likely to increase congestion, and recommend the use of the hot vaginal douche. When the congestion is confined to the uterus proper, say, in the case of an acute version or flexion, and where there is no tenderness nor any morbid condition to be detected in the appendages, the use of the dilator or graduated bougie, by destroying the spasm at the os internum and generally relieving uterine congestion, will give relief; but unless the cases are carefully chosen, ovaritis and so forth is apt to be set up, and the patient's sufferings increased rather than relieved.

If the patient be married, such treatment, along with prolonged absence from her husband, is often followed by the most beneficial effects. As the point under discussion is the relation of so-

called obstructive dysmenorrhœa with sterility, I should be travelling beyond my subject were I to allude to the treatment of sterility more in detail. This much I, perhaps, may be allowed to say, that where there is no marked dysmenorrhœa nor any very definite local condition to treat, sterile women had better be left alone. I venture to think that there is too much interference with such women, and with comparatively little benefit. Sterility depends on so many slight irrecognisable causes entirely beyond treatment—a fact proved by the reports of Winckel on 160 necropsies of women between 15 and 45 years of age—that unless some very definite local cause be found, local treatment should be avoided.

I do not wish to underrate the importance of the subject, but when we consider that statistics based upon many thousands of observations show that one marriage in about ten is unfruitful, this fact alone is sufficient to establish the importance of sterility, whether it be viewed from a scientific or social point. And when we further consider that any opportunity of studying the conditions leading to sterility post-mortem are exceedingly infrequent, it is only by the record of clinical experience that we can hope to advance a knowledge of the subject.—*British Med. Jour., Oct.* 20.

84.—ON THE ACTION OF CERTAIN DRUGS ON THE PREGNANT UTERUS.

By Lombe Atthill, M.D., President of the King and Queen's College of Physicians in Ireland.

It is right that I should, in the first instance, say that I have never made any experiments on pregnant women, and that the opinions I now hold are based, first, on the fact that, in the treatment of certain diseases and affections in which I felt myself called on to administer to pregnant women drugs supposed to have the power of inducing abortion, I never observed them to have any such effect; and, secondly, that having administered the so-called emmenagogues to women who were not pregnant, in almost every possible form, my belief in their value has been so shaken that I have grave doubts as to their efficacy, except in cases where the amenorrhœa depends on the presence of some condition or affection such as anæmia, incipient phthisis, etc., which being removed or cured, menstruation recurs.

I will relate a case which made a great impression on me at the time, and has materially influenced my practice ever since. About fifteen years ago I was asked to see a lady threatened with abortion at about the tenth week of pregnancy. She had been married two years, and during that time had aborted on three previous occasions. I found that she had lost some blood, which continued to come away continuously, but there were no pains; and,

on examining her, the os uteri proved to be patulous. She was very nervous, having had sharp hemorrhage on a previous occasion. Taking into consideration her history in connection with her present state, I came to the conclusion that she would again abort, probably with hemorrhage; and I deemed that the sooner the ovum was expelled the less risk there would be of the occurrence of a dangerous loss. With the view, therefore, of lessening the risk of hemorrhage and exciting the uterus to expel the ovum, I put her on ergot. The result was most satisfactory, but not what books would have led a student to suppose. No uterine action followed on the administration of the ergot, but the hemorrhage gradually lessened. I kept this patient in bed for many weeks, and in due time she gave birth to a son, who still lives and is in robust health.

From that time on I have treated similar cases on the same principle—that is, to patients threatened with abortion, hemorrhage being present, but uterine action, indicated by the occurrence of pains, not having been excited, I administer ergot; these patients are frequently plethoric, with relaxed muscular tissue, and I think it probable that in them the ergot excites a tonic contraction of the muscular tissue of the uterus, which by lessening the blood-supply checks the hemorrhage. In some the ergot excited uterine action, but in all these I had little hope of averting abortion, and believed that it was inevitable. In many ergot seemed to produce no effect at all, and my belief is that ergot will rarely excite uterine action in cases of threatened abortion, unless the ovum is already blighted and virtually a foreign body. If, therefore, for any reason, the administration of ergot was deemed necessary in the case of a pregnant woman, I should not hesitate to give it. I may add that for many years I was in the habit of administering ergot for several days before the expected date of parturition to patients liable to *post-partum* hemorrhage, with the view of anticipating its occurrence, with very satisfactory results; in no single case did labour set in earlier than was expected, in none did the child suffer in any way, while in two or three cases the occurrence of labour seemed to have been actually delayed by several days. Iron and quinine I have for years administered as freely and in as large doses to pregnant women, as to any other patients, with perfect safety; in fact, I much doubt whether the ordinary medicines given in ordinary doses have any effect on the retro-ovarian system, whether it be in the case of pregnant women, or taken during the continuance of menstrual flow.

Personally, I know of no emmenagogue which will cause abortion; ergot, quinine, and strychnine, in ordinary medicinal doses I am satisfied will not do so. Savin and rue, etc., I have never ventured to give to pregnant women, because I believed them to be

unsafe drugs to administer in such cases; but iron is perfectly innocuous, and its being classed by any practitioner with "emmenagogues which cause abortion," shows how little consideration has been given to the action of drugs on the utero-ovarian system by medical men.

I can, in conclusion, without hesitation, say that any of the ordinary tonics, including quinine and strychnine, in ordinary doses, may be safely administered, assuming, of course, that the patient's general health is good. None of them will induce abortion, but neither will any of them have any direct effect either in inducing or retarding the menstrual flow, and perfect general health is not incompatible with even prolonged suppression of menstruation.—*British Med. Journal, Feb.* 16, 1889, *p.* 350.

85.—ON MANAGEMENT OF THE THIRD STAGE OF LABOUR.

By D. Berry Hart, M.D., Lecturer on Midwifery, and Assistant Physician Royal Infirmary, Edinburgh.

At the beginning of my practice, I adopted Credé's method of expression of the placenta. The Credé method is intended to separate and expel the placenta. I had not tried it long when I found it most unsatisfactory. Not only did it cause bleeding by forcing blood into the lacerated tissues below the placental site, but on two occasions I expelled the placenta *minus* the entire membranes, and had to chloroform my patient and remove these manually. The error of this lay in the Credé method, which I consider the most dangerous plan possible for separation of the placenta.

I came to the conclusion, therefore, that the uterus would manage the separation of the placenta better than I could, and, accordingly, for some years I merely kept my hand on the uterus, employed manipulation of it if bleeding came on, and limited the Credé method to helping the expulsion, never employing it to separate the placenta. My guide to the period of separation was the marked decrease in the size of the uterus.

This method gave good results; why, I did not know. and I fell back for comfort on the fact, unfortunately not well enough known, that non-interference with a natural process gives better results than ignorant, though well-meant, meddling. I do not at all depreciate thorough manipulation of the uterus when hemorrhage is taking place. I hold this to be imperative. What I condemn is quite another matter, viz., forcible compression of the uterus to expel the unseparated placenta.

The method I have now adopted gives me excellent results, and is based entirely on the view I have summarized. For convenience I shall arrange my description in the form of brief rules.

1. When the child is born, note that the fundus uteri stands at or below the level of the umbilicus, and that the uterus does not contain a second child. Give an ergotine injection in a multipara, at any rate, if labour has been slow.

2. Do not tie the cord until the child has cried freely, and then tie only one ligature.

3. Cut the cord on the placental side of the ligature, and let the placental part of the cord drain thoroughly into any small dish; then tie it, to prevent any staining of the bed linen. Tie a second ligature at once, however, if a second child be present.

4. Before applying the first ligature it should be thoroughly ascertained by abdominal palpation that the uterus is not so relaxed as to bleed.

5. Continue with the hand on the uterus; do nothing when a good contraction comes on, and allow the uterus its normal relaxation after the pain is over.

6. Should bleeding from the uterus come on, or should the pains be feeble, then grasp the uterus so as to bring on a contraction to arrest hemorrhage.

7. Do nothing further in a normal case until the lessening of the bulk of the uterus shows that the placenta is separated and being expelled; the expulsion may then be aided by "expression."

8. One can tell when the placenta is separated and not driven down by noting that gentle expression drives it down.

The reasons for the above treatment are as follows:—Ergotine and manipulation are used to insure good marked retraction and to empty the intervillous spaces well. The fœtal circulation is aspirated thoroughly by allowing the child to cry well, and by draining the cord. These two measures give the necessary disproportion sooner, as the placenta cannot now follow up the increase in placental area during relaxation, is made as small in area as possible, and relaxation thus sooner tears the trabeculæ.

Since practising this procedure, I have had no difficulty in the normal Third Stage of Labour. Interference is reduced to a minimum, and the membranes expelled intact.—*Edinburgh Med. Journal, Oct.* 1888, *p.* 291.

86.—ON ADHERENT PLACENTA, AND ITS TREATMENT.

By D. Berry Hart, M.D., F.R.S.E., Assistant Physician to the Royal Infirmary, Edinburgh.

Cases of adherent placenta vary much in their degree, and range from those where no hemorrhage accompanies the third stage, and where the separation of the placenta is easily performed by the hand, up to those where there is profuse hemorrhage, sometimes proving rapidly fatal, as well as those where separation is effected manually with the greatest difficulty even by the most skilled,

and where the patient runs grave risk of septicæmia. A clinical classification of adherent placenta, therefore, seems to me a requisite, and I submit the following as one based on the gravity of the case, and thus giving an idea of the prognosis.

1. Cases of total adhesion, unaccompanied by hemorrhage, where the separation of the placenta manually is easy, and is accomplished in the normal plane of separation.

2. Cases of partial adhesion high up in the uterus where the placenta is separated in its lower part, often accompanied by serious hemorrhage. The upper adhesion is extensive.

3. Cases of adhesion low down, the placenta being separated above; not usually accompanied with hemorrhage.

4. Cases of very perfect adhesion, usually accompanied with little hemorrhage, but where separation is effected manually with great difficulty. The placenta is usually separated where the villi and serotina meet, and thus the uterus is left with the usual deciduous layer of the serotina still adherent, and often with portions of the fœtal placenta attached.

This classification is of course a sharp one, and combinations of the varieties often occur. The first class is the typical and easy one. The patient has probably had a previous endometritis, has a slow second stage, and then a third stage where the placenta is not separated and expelled in the usual time. I have noticed this slow second stage occasionally, and usually set it down to ineffective uterine pains owing to the adhesion preventing proper uterine retraction. During the third stage the uterus may contract irregularly, developing nodules, as it were, in its contour. As the placenta is not expelled within three quarters of an hour, and is still in the uterus and unseparated, the obstetrician makes up his mind to separate manually, a procedure easily accomplished. I need not give the details of this, but remark that the patient must be chloroformed, the vagina douched with corrosive sublimate (1 in 3000). The dorsal posture is the best, and both hands are employed, the outer one to steady and depress the uterus as required. The separation of the placenta is best effected from below up, the entire separation being finished before expulsion is brought about. Sometimes confusion to the inexperienced operator is caused by his passing his hand within the membranes instead of keeping outside them. That an antiseptic uterine douche be used after full expulsion, goes without saying.

The second class of case gives by far the most serious complication at the time. Blood pours from the relaxed uterine wall where the lower part of the placenta is separated, while the attachment above hinders uterine retraction. The attendant, despite all care to secure retraction by legitimate grasping and friction of the uterus, by hypodermics of ergotine, and the use of the hot douche, fails, and unless the placenta is promptly separated manually, so

as to remove the cause of inefficient uterine action, the case may speedily become serious. Cases of ordinary flooding so readily, as a rule, yield to the usual means given above, that manual removal of the placenta is quite unnecessary interference. I think, however, that we err in waiting in this class of adherent placenta before resorting to separation by the use of the hand. No doubt the mistake can be rendered harmless by antiseptics, and further, the advice given here may be abused by the inexperienced, but experience will correct the error of undue meddling. I wish, therefore, to urge caution in this instance, viz., the attendant must always, in a flooding that looks threatening, remember the possibility of this dangerous upper adhesion of the placenta with the lower part separated. The greater the adhesion above the greater the risk.

The fourth class is not accompanied by flooding, but the union of uterus and placenta is so dense that separation is a matter of immense difficulty. The placenta in such cases is separated where the villi and serotina blend, and the separated placenta is practically the fœtal portion with amnion and chorion. This is the case where septicæmia is to be feared. The uterus is left lined by a layer of dead tissue, affording a nidus for infection, and exposing the patient to the gravest septic risks. Such require most stringent antisepsis during the puerperium, and the immediate use of the intrauterine douche if any threatening of mischief arise.

Separation of the placenta when adherent may occur, therefore, in the following planes: (*a*) Where villi and serotina blend; (*b*) in normal trabecular layer; (*c*) even at a superficial distance below muscle, usually only partial.

In conclusion, I would urge a more systematic microscopical examination in all cases of adherent placenta, especially where any superficial muscle is removed.—*Edinburgh Med. Jour., March, p.*817.

87.—ON VENTRAL FIXATION OF THE UTERUS FOR INTRACTABLE PROLAPSE.

By John Phillips, M.B.Cantab., M.R.C.P., Physician to the British Lying-in Hospital, London.

By ventral fixation of the uterus is meant the performance of abdominal section and the fixation of the uterus, either by sutures through its substance or through its appendages, to the anterior abdominal wall. Evidently this may be done in many ways: 1. By removal of the uterus and bringing the stump into the abdominal wound (hysterectomy). 2. Removal of both ovaries and appendages, and suturing one or both stumps into the abdominal wound. 3. Suturing the round ligaments as they pass obliquely from the uterus, and bringing the stitches out external to the median incision. 4. Passing stitches through the muscular

tissue of the fundus (true hysterorrhaphy). 5. Removal of the appendages on one side only, and suturing the stump, not into the wound, but external to it, by making the stitches pierce the abdominal wall; adhesion between the stump and parietal peritoneum being the object to be attained. I shall criticise these various methods later on in the paper.

Case.—On March 12th, 1886, I was asked to see, in consultation with Mr. Reginald Clarke, a patient aged forty years, a nullipara, who had been married nineteen years. I found complete procidentia present, rectocele and cystocele. The mass protruded six inches and a half from the ostium vaginæ, while the surface was extensively and deeply ulcerated, bleeding freely on manipulation, and was very tender. Her general condition was unfavourable. The skin was harsh and dry. Urine scanty; sp. gr. 1008; non-albuminous. The catamenia were irregular as regards time, and always scanty, the discharge lasting thirty-six hours, and being of light colour. There has never been any dysmenorrhœa. Palliative treatment had been tried for several months, in the shape of rest, tampons, and all varieties of pessaries. The tumour was easily reducible. The ulcerated surfaces were freely cauterised, and at the end of a month I was enabled to introduce a Cutter's pessary. This produced the desired effect for six weeks, when the patient's condition became as bad as formerly. After further rest and expectant treatment, without any beneficial result, I determined to try operative interference. On March 1st, 1887, I performed a modification of Braun's operation—namely, excision of an elliptical piece of mucous membrane from the front and back of the procident tumour. After bringing the edges together and reducing the curtailed mass, the best result was obtained, as the parts healed by primary union. A month later I operated upon the stretched perineum, baring the surface high up on the posterior wall and well forward on either labium majus. Good union resulted, and the vagina was now so contracted as barely to admit the examining finger. In six weeks' time the cervix was quite healthy, and the length of the uterine cavity two inches and a half. A ring pessary was inserted, and she remained quite comfortable until November, when, from straining at stool, she thinks, acute prolapse took place, and reduction could not be effected without anæsthesia. From this time the old condition of things recurred, the prolapse becoming as bad as ever and her suffering very great. To add to her troubles, copious and repeated hemorrhages took place, which reduced her to such an extent that she spent more than six weeks in bed before complete hæmostasis could be obtained. On resuming the upright posture the hemorrhage began again, and, as her mental condition was causing some apprehension, it was deemed advisable to resort to some more radical treatment. I negatived the Alexander-Adams

operation because the patient was very stout, and, after trying the operation on the dead subject, I failed in two instances out of six attempts to find the ligaments; in addition, the prospect of permanent relief afforded by this mode of procedure did not seem good enough. On March 7th, 1888, after the usual preparatory treatment, I opened the abdomen by an incision of two inches and a half, intending to suture the round ligaments to the anterior abdominal wall. The uterus was forcibly pushed up into a position of extreme anteversion by an assistant per vaginam. Several coils of small intestine were found in front of the fundus (a similar condition is reported by Sänger). Owing to the thickness of the abdominal walls it was difficult to get the uterus well into view; it was then found that the round ligaments were almost entirely atrophied, and that any attempt to utilise them as a means of suturing the uterus would be followed by failure. On examining the ovaries, I found the left quite healthy, but the right composed of several cysts, the mass being of the size of a Tangerine orange. This I regarded as fortunate. I removed the ovary and tube, leaving a thick pedicle, and then, by means of two silkworm threads, sutured the stump to the anterior wall, being careful to pass them on the inner side of the epigastric artery. I closed the incision, and then drew the two stump ligatures tight, passing them over a piece of solid india-rubber cord, and fastening them by means of split shot and coils. The patient was kept on an inclined bed, the foot being six inches higher than the head, and the vagina plugged with cotton-wool pledgets, thus preserving the position of anteversion. The progress of the case was sufficiently simple. I drew the ligatures out on the twelfth day, and had the satisfaction of feeling the uterus slightly but firmly fixed, the fundus rotated towards the right and anteverted. No descent of the organ followed straining. I put in a ring pessary and allowed her to walk. Since that time she has been quite well, and a few days ago I examined her and found the condition of things unaltered. She suffers no pain, and has had no dysuria or hemorrhage; she is, moreover, able to walk four miles a day without fatigue. Menstruation has been in abeyance since the operation.

Remarks.—(*a*) As to choice of operation. On referring to the five methods enumerated above, the first (hysterectomy) was quite unjustifiable, the patient being in the prime of life, and, although nulliparous, there was the possibility of maternity to be borne in mind. Moreover, the disease was not sufficiently serious to allow me to entertain the idea of such an operation for a moment. Neither could I bring myself to remove the healthy ovary, as it would have done away with all chance of child-bearing. The third was impossible for the reason already given above, and I am not aware that this clinical fact has been noted—viz., the

concurrence of prolapse and atrophy of the round ligaments; was it cause and effect or merely a coincidence in this case? Hysterorrhaphy is said to be attended by some danger, but whether real or not I am unable to state. Howard Kelly certainly deprecates the proceeding, although Tate and others appear to have performed it with impunity. By a process of exclusion, then, I have shown my reasons for choosing the method I did, and so far the result has justified the means. Should pregnancy follow, the behaviour of the adherent stump under the new condition will be watched with much interest. (*b*) Technique of the operation. There appear to be no more dangers than ordinarily occur in abdominal sections. The uterus must be well pushed up and anteverted by an assistant per vaginam, and the intestines kept out of the way by another. The points for passage of the transfixing sutures must be placed about an inch outside the central incision and nearer the pubes than the umbilicus; the epigastric artery must be made out before the suture is passed.

The after-treatment of these cases is most important. The inclined bed should be always used, and a pessary inserted before the patient is allowed to get up, as the newly formed adhesion is sure otherwise to stretch and the prolapse recur. Suturing without removal of the ovaries is the most justifiable of all these operations, and more than one case of success is on record; it was only, in my case, because of the ovarian disease that I was enabled to make use of the stump as already described. Olshausen's case was much like mine as regards the antecedent history. He had tried everything fruitlessly, and then he stitched the base of the broad ligaments and the round ligaments to the anterior wall; the operation, however, failed. He is very decided in his opinion as to the limitation of this method. He thinks that only in very isolated and otherwise hopeless cases (*trostlos*) of adherent retroflexio and prolapsus uteri should the operation be performed. With this opinion I think all who look upon the matter from an unbiased point of view will cordially agree.

The bibliography relating to this subject is of recent date and very scanty; I have, however, appended those of value:—1. Olshausen: "Ueber ventrale Operation bei prolapsus und retro-versio Uteri" (*Centralbl. für Gynäk.*, 1886, Bd. x., s. 698). 2. Sänger: "Ueber operative Behandlung der retroversio-flexio Uteri, &c." (*Centralbl. für Gynäk.*, 1888, Bd. xii., s. 17, 34, and 102, with figures; and 1885, Bd. ix., s. 664). 3. Howard Kelly: "Hysterorrhaphy," with figures (*Amer. Journ. Obstet.* 1887, vol. xx., p. 33). 4. Klotz: *Centralbl. für Gynäk.*, 1888, Bd. xii., s. 11, 69. 5. Leopold: "Ueber die Annähung der retroflektiren Gebärmutter an der vorderen Bauchwand" (*Centralbl. für Gynäk.*; 1888, Bd. xii., s. 161).—*Lancet, October* 20, 1888, p. 761.

88.—ON PUERPERAL FEVER, A PREVENTABLE DISEASE.

By Charles J. Cullingworth, M.D., F.R.C.P., Obstetric Physician to St. Thomas's Hospital, London.

[The following excerpt forms the conclusion to an eloquent and impressive address delivered at the opening of the winter session at St. Thomas's Hospital. Statistical evidence of the most conclusive kind is first adduced in support of Dr. Cullingworth's contention that Puerperal Fever, using the term in its most comprehensive sense, is a completely preventable disease; or, in other words, that puerperal fever always arises from causes completely within the control of the obstetric attendant. Dr. Cullingworth, after quoting Continental, American, and British statistics on the subject, with very good reason expresses the hope that his address "may contribute in some degree to the overthrow of a doctrine that has caused incalculable mischief"—namely, the doctrine of the autogenetic origin of puerperal sepsis.]

In the face of such results as these, it is surely time to give up talking about an autogenetic variety of puerperal fever. The precise character of the antiseptic measures to which these wonderful results are due varied in different hospitals, and varied, too, in the same hospital from year to year. It would, therefore, serve no good purpose to attempt to describe them in detail. The object at which they all aimed was the same, namely, the exclusion of pathogenic micro-organisms from the genital passages. As to the best methods of effecting this object, there is, no doubt, still some difference of opinion. The best authorities, however, are, I believe, quite agreed:—

1. That the fundamental rule in antiseptic midwifery, the neglect of which renders all other measures futile, is to ensure perfect antiseptic cleanliness of the hands of the attendants, of any instruments or appliances that may be required, and of everything that is liable to be brought into contact with the genital passages.

2. That the most efficient antiseptic for this purpose at present known is corrosive sublimate.

3. That the best method of ensuring antiseptic cleanliness of the hands is to wash them thoroughly with soap and warm water, using a nail-brush vigorously, and then to rinse them carefully, again with the help of a nail-brush, in a solution of corrosive sublimate, 1 in 1,000.

4. That if the patient has been already examined without antiseptic precautions, the vagina ought to be irrigated with a germicide solution as a preliminary proceeding.

5. That if, for the foregoing or any other reason, sublimate irrigation be employed, care should be taken to avoid any of the solution lodging in the passages, lest the patient be mercurialised.

With regard to the desirability of sublimate irrigation as a routine practice before and after delivery, opinions vary. It cannot be denied that some of the most brilliant results hitherto obtained have been obtained by those who regularly practise sublimate irrigation. On the other hand, however, there is the experience of the hospitals of New York and Boston, where the crowning success was achieved after irrigation as a routine practice had been entirely abandoned. Moreover, it must not be forgotten that several cases have been recorded where sublimate irrigation has resulted in fatal mercurial poisoning. For the ordinary douching of the vagina during the puerperal period, the simpler and non-poisonous antiseptic solutions are, in my opinion, quite as efficacious as the more powerful ones, and infinitely less dangerous; but as a disinfectant for the hands, instruments, and other appliances, corrosive sublimate is perfectly free from danger, and at present stands unrivalled.

I plead to-day for the more general adoption of antiseptics in midwifery. The lying-in hospitals have very properly led the way; but, although many private practitioners have taken the matter up with enthusiasm, the practice of antiseptic midwifery is as yet far from being universal. There is still a notion abroad that this question of puerperal fever is one that chiefly concerns the lying-in hospitals. It is obvious, however, that the 2,708 deaths from puerperal fever registered in England and Wales in 1886 could not all be hospital cases. As a matter of fact, nearly two-thirds of them occurred in counties where not a single lying-in hospital exists; and even as to the remaining third, the lying-in hospitals of this country are so few in number and so comparatively small in size that they cannot possibly be accountable for more than an inconsiderable proportion of the cases. A certain number, no doubt, occurred in the workhouses, but the immense majority took place in the patients' own homes. The only way to avoid this terrible mortality, and to avoid also the enormous amount of puerperal disease which, because it is not fatal, remains unrecorded, is for every practitioner in midwifery to recognise his personal responsibility in the matter.

The essential antiseptic measures are very simple, and their habitual employment is by no means burdensome. A pint of corrosive sublimate solution of the proper strength (1 in 1,000) can be prepared in a minute or two from a 10-grain powder, a dozen of which can be put in a little box and carried in the pocket. In the powders supplied by my direction to the obstetric clerks in connection with our own maternity department at St. Thomas's, the 10 grains of corrosive sublimate are mixed with 50 grains of tartaric acid and a grain of cochineal. The tartaric acid increases the bulk of the powder and, what is more important, lessens the risk of a portion of the mercury being lost by precipitation, either

from being formed into an insoluble albuminate, or from the alkalinity of the water, as in the case of London. The cochineal is of course merely a colouring agent to prevent the solution being mistaken for anything else.

A solution of corrosive sublimate does not, like solutions of potassium permanganate, lose its antiseptic property after being once used. It is, therefore, usually sufficient to prepare a supply on entering the lying-in room, to renew it when the labour is over, and afterwards to prepare a fresh solution once a day. The solution should be placed in a small bowl on the washstand by the side of the wash-hand basin, and kept there, ready for immediate use, from the time the first internal examination is made to the end of the puerperal week.

The best antiseptic lubricant with which we are at present acquainted is a solution of corrosive sublimate in glycerine (1 part to 1,000), and this also can be easily carried about in a suitable and well-secured bottle.

In Germany the use of antiseptics in private midwifery practice is a matter of State regulation. You are no doubt aware that it is the custom in that country for all classes to be attended in their confinement by midwives, the doctors being summoned only in cases of difficulty or danger. Every midwife is compelled by law to carry with her a bag containing all the necessary appliances. By the kindness of Dr. Matthews Duncan, I am able to show you one of these bags. Here, in addition to the usual armament of catheter, scissors, tape, enema-syringe, &c., is all the apparatus necessary for disinfection, including the indispensable nail-brush; and, to give completeness to the arrangements, there is in every bag a book of instructions. If any midwife fails to use these things she is liable to punishment. The tendency of public opinion in this country is not in the direction of compulsory legislation in such matters. The use of antiseptics in Great Britain is, and is likely to remain, a question of individual responsibility, not of penal enactment. Surely it ought not on that account to be considered the less binding.

I have now stated my case. My plea has been on behalf not of the sickly, and aged, and useless members of the community, but of the mothers of this country, whose lives and health are of an importance quite incalculable. Tragedies such as those I have felt it my duty to relate to you are still being enacted in our midst. I know of a country town not far from London where, within the present year, puerperal fever has singled out the patients of one of the local practitioners exactly as it did at Plymouth and other places fifty and a hundred years ago. For six months every patient that he attended (with the exception of two, in whom labour was over before his arrival, and in whom, therefore, no examination was necessary) died of puerperal fever.

May I, in conclusion, borrow the words of one whom the whole English-speaking profession regards with affection and with pride, our venerable American *confrère*, Oliver Wendell Holmes, who, writing five and forty years ago of similar catastrophes, rose to an eloquence which even he has never surpassed? "It is," he says, "as a lesson rather than as a reproach that I call up the memory of these irreparable errors and wrongs. No tongue can tell the heart-breaking calamity they have caused. They have closed the eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it, with less cruelty, the death of its dying parent. There is no tone deep enough for regret, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the streets has pity upon her sister in degradation when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law, brought down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly."—*British Medical Journal, Oct.* 6, 1888, *p.* 746.

89.—A NEW OPERATION FOR VESICO-UTERINE FISTULA.

By Francis H. Champneys, M.A., M.D., London.

[Hitherto we have had only two possible means of treating a Vesico-Uterine Fistula, viz., 1, closing the cervix uteri; and 2, slitting the cervix down until the fistula is reached, then paring its surface and closing the fistula and slit. Neither plan is satisfactory. The following method of operation was suggested by the mode of removing the uterus in vaginal hysterectomy, and it will be seen at once to be the very thing required for the successful treatment of this rare, but troublesome, form of fistula. Dr. Champneys thus describes his new operation:]

The patient being in the lithotomy position, I passed a long probe through the urethra, and brought it out of the cervix, bending it slightly; the two ends lay—the front end in front of the pubic arch—the hinder end in front of the perineum, and kept the cervix well down; a volsella was also used to steady the anterior lip.

A transverse incision about one and a half inches long was made

at the reflection of the anterior fornix vaginæ from the cervix, and the bladder dissected from the cervix by scissors and fingers, as in vaginal extirpation of the uterus and supra-vaginal amputation of the cervix. As soon as the probe was exposed, a thick silk thread was drawn through the fistula, and the dissection carried on until the operator got above the fistula, which appeared as a round hole in the bladder, and another in the cervix, each admitting the middle finger easily. No freshening was required, as the whole surface was necessarily raw.

Seven fine silver sutures were used to close the fistula, being passed from side to side, being entered about one-eighth of an inch from the hole in the bladder, and brought out on the edge of the hole, avoiding the mucous membrane. Four similar sutures closed the hole in the cervix. After closure, milk was injected into the bladder, and though a little oozed between the stitches, the edges were seen to be in good apposition. These sutures were cut short. The vaginal wall was then united to the cervix by four silver sutures left long, and subsequently removed. A self-retaining catheter was introduced into the bladder, and the vagina stuffed with gauze soaked with corrosive sublimate.

The bladder was afterwards occasionally washed out with boracic acid lotion, and the vagina with corrosive sublimate solution, being afterwards stuffed with iodoform gauze. The gauze was discontinued on May 1st. Temperature normal throughout. Not a drop of urine passed through the fistula, and the result was completely successful, micturition being re-established quite normally.

Remarks.—The fistula seems to have been produced by injury with the forceps, and not by sloughing, unless the patient was mistaken in her statement, on the truth of which she insisted, viz., that the urine flowed the wrong way from the first. The ease with which the dissection of the bladder from the cervix may be accomplished will be recognised by anyone who has performed the operations mentioned above, and the avoidance of cervical tissues is a distinct advantage. Besides this, two broadish surfaces are united, and it is quite likely that the holes in the bladder and cervix after dissection will not be exactly opposite each other, which again would assist healing if the tissues were not inclined to heal promptly. The two holes in the bladder and cervix are thus probably of advantage. I used silver sutures because I was very anxious not to fail in a new operation on account of the sutures. Recent Cæsarian sections show how safely silver sutures may be buried. In subsequent operations I should be inclined to try silk or chromic gut, so great is my belief that fistulæ will be easily and successfully closed by this method.—*Trans. of the Obstetrical Society of London for* 1888, *p.* 350.

90.—EXTIRPATION OF UTERUS FOR MALIGNANT DISEASE.

By Sir SPENCER-WELLS, Bart., F.R.C.S., Surgeon to the Queen's Household.

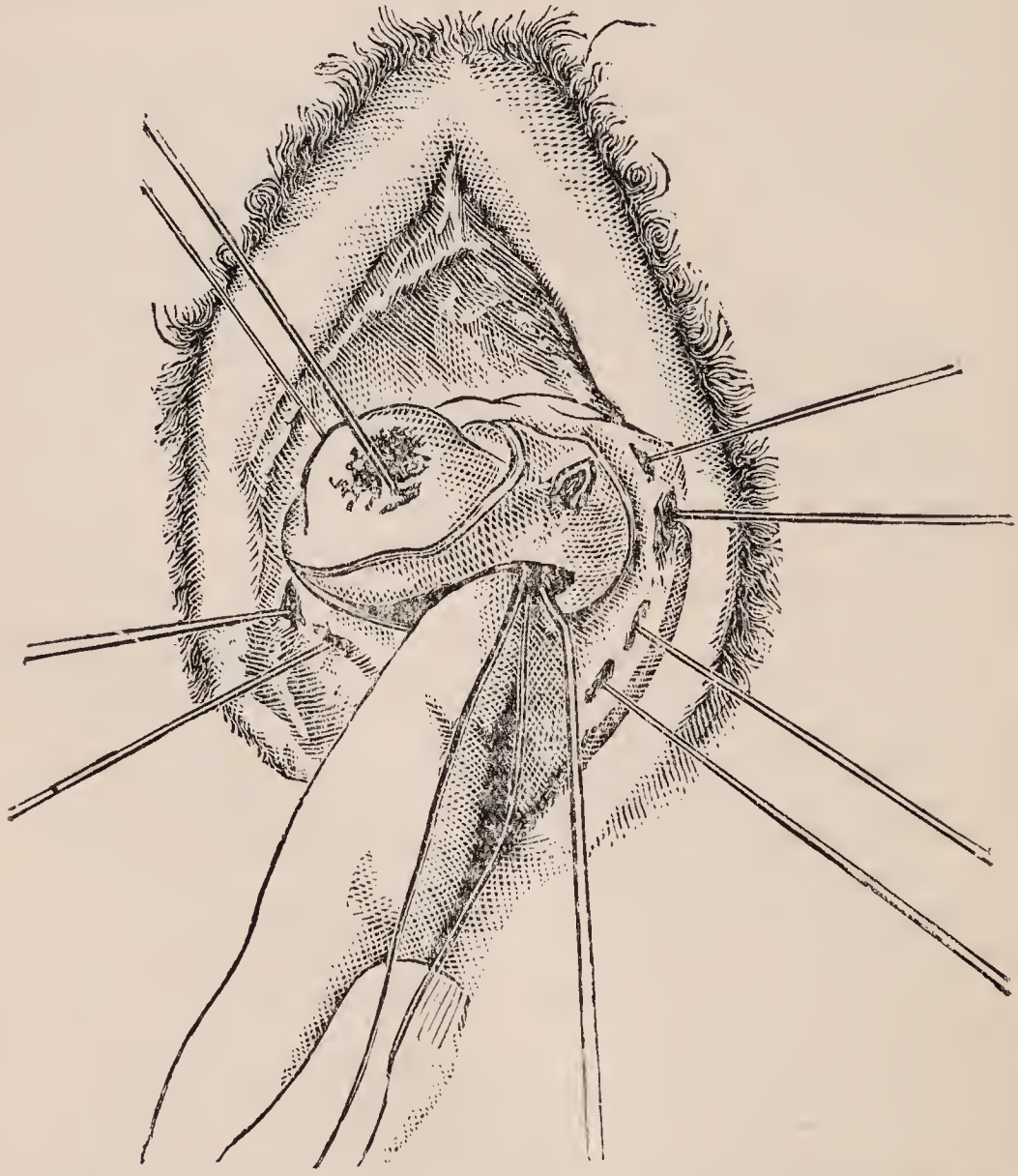
In any case where cancerous disease has extended much higher than the os, and there is good reason to believe from the mobility of the organ that the surrounding tissues are still free from invasion, I advise total excision as the best practice; and increasing experience is materially simplifying the operation. I cannot pretend now to describe the different steps in detail, and I need only allude to the importance of preliminary disinfection of the vagina, removal of any dead or softening cauliflower excrescences, and shaving off all hair from pubes and vulva. This may be done the day before operation.

During the operation the patient is fixed in the lithotomy position by anklets and wristbands, or by a thigh crutch; and a *douche* and elastic tube are so arranged that a stream of warm, slightly carbolised water may continually irrigate the vagina. The body is well covered, as well as the arms, legs and feet, to prevent chilling. If the uterus is fairly mobile, no speculum (at most one or two retractors) is required. Some operators draw down the uterus by a simple or double hook, or by hooked forceps; but, if the cervix is firm, any friable part having been cleared away, the safest plan is to pass a strong wire through the cervix. This is quite safe, and not so likely to be cut as silk. Supposing that any intention of turning the fundus either forward or backward is, as it ought to be, abandoned, the cervix is pulled by the wire towards the vulvar orifice, the labia held aside, and the sides of the vagina separated if necessary. The operation is completed by different stages.

1. Division and loosening, and pushing up to the extent of half to three-quarters of an inch of the vaginal mucous membrane behind and in front of the cervix.
2. Pushing upwards or separation of the bladder and ureters from the neck and anterior surface of the body of the uterus.
3. Opening Douglas's pouch, and introduction of a sponge to keep up the small intestines.
4. Securing the uterine arteries on both sides by ligature or by pressure forceps.
5. Division of the broad ligaments and other attachments, and removal of the uterus.
6. Cleansing vagina, removal of sponges, arranging ligature-threads or forceps, and loose plugging with iodoform gauze.

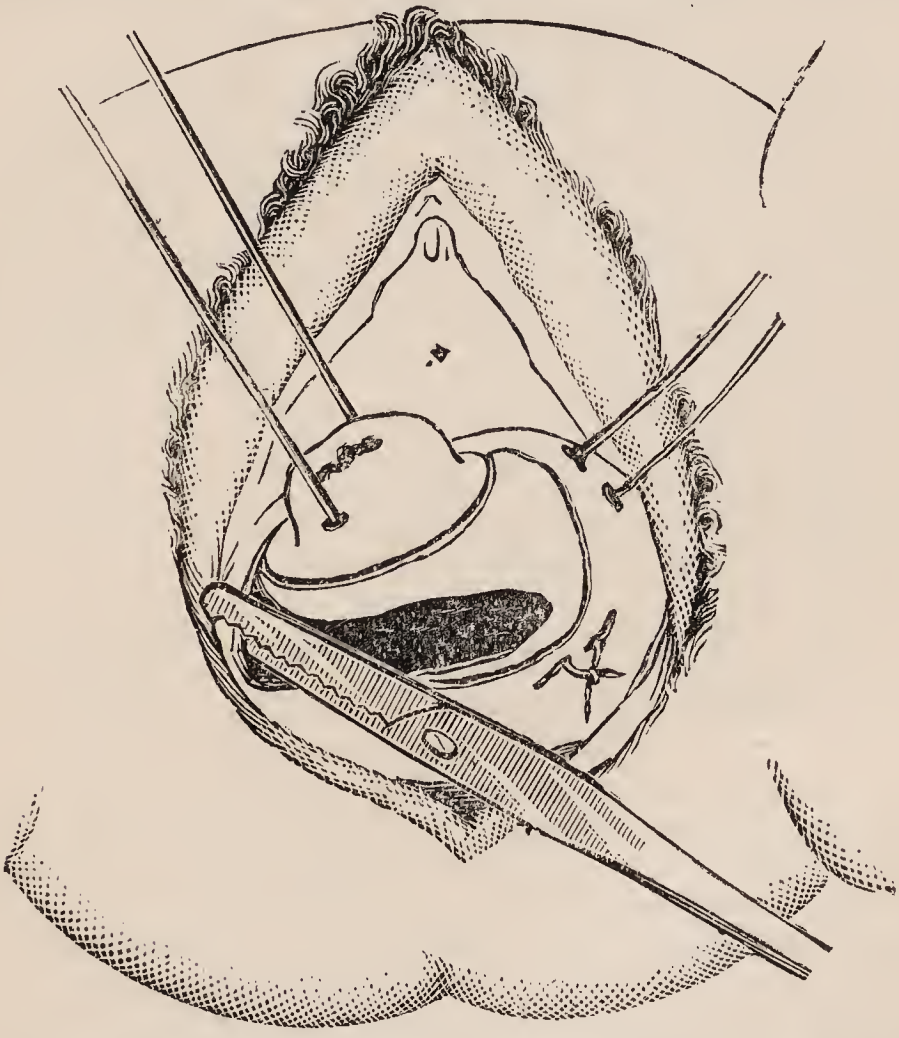
Sometimes the separation of the bladder from the uterus is quite easy, sometimes very difficult, and I am sure great care is always required to avoid the ureters. In several recorded cases one, and in more than one case both, ureters have been tied or divided.

I need hardly remind you that one mode of death in uterine cancer is uræmic coma, caused by closing up of one or both ureters; and I show you here the parts removed after the death of a patient from uræmic coma. She was operated upon by a very experienced American surgeon for vesico-vaginal fistula; yet one ureter was included in the sutures which closed the fistula, and the other was left opening into the vagina behind the united edges of the fistula. In some recorded cases the bladder has been wounded, and in others the catheter or sound passed through the urethra, and used as a guide to the separating finger or to pull the bladder forward, has been seen through the thin muscular coat and mucous membrane of the bladder.



In one of these drawings the mode of passing one of the ligatures used to secure the uterine arteries is shown. A threaded

blunt needle is guided by one finger passed into Douglas's pouch. One or more may afterwards be passed in the same way to secure the broad ligament on either side, or the same object may be gained by the use of pressure-forceps, as shown in the next drawing. These are not removed, but are left on for twenty-four, thirty-six, or forty-eight hours, until all danger of bleeding has ceased. Leopold and other German operators prefer the ligature. Péan, Richelot, and other Frenchmen trust to the forceps. I believe I was the first to suggest their use, and one of our Fellows, Mr. Jennings, the first in this country to carry out the suggestion with success.



But it matters very little who first proposed or first practised a particular method. The chief thing is to decide whether it should be followed or not, and my own belief is that it must be left to the choice of the surgeon in each case. He should be prepared to secure bleeding vessels by ligature or the forceps, as he finds he can do it more easily. Forceps with a variety of curves may prove more convenient than the straight instrument shown in the drawing. It may be that ligatures will do all that is required, and the best way of applying them that of Leopold, as shown in the

drawings, each ligature passing twice through the peritoneum of Douglas's pouch and the vagina, and being tied so as to lie parallel to the line of incision—not simply bringing serous and mucous edges together, but compressing in separate portions the whole of the vaginal wall. I think the quickest way to do this would be to have a long ligature threaded at each end on a small needle, which would be passed by a needle-holder from the serous outward through the mucous membrane.

When these ligatures are tied they form a chain of compression all round the edges, and may be used afterwards by loosely tying some or all of the long ends together to close the opening from the vagina into the peritoneal cavity as far as may be desirable. By crossing their handles pressure-forceps would have the same effect. My own feeling would be rather to trust as a rule to forceps, and only exceptionally to ligatures. Forcipressure is simpler, more secure, takes much less time, and saves much trouble and suffering to the patient after operation. When an operator who has prepared himself by sufficient practice on the dead body trusts to forcipressure, and has prepared everything before he begins, I feel sure that fifteen or twenty minutes would give ample time to complete the operation if the ovaries are not disturbed. If healthy, I think they had better be left alone, and so may the Fallopian tubes. But if the disease has extended high up the uterine cavity it would be safer to remove the tubes; and this would add very little to the duration of the operation.—(*Morton Lecture for* 1888). —*British Med. Journal, Dec.* 8, *p.* 1267.

91.—ON ROTATION OF OVARIAN TUMOURS.

By J. Knowsley Thornton, M.B., C.M., Surgeon to the Samaritan Hospital, London.

The twisting of the ovarian pedicle, from axial rotation of the tumour, is of great interest to the pathologist, both as to its etiology and its results; and it is a sufficiently common accident to make it of even greater interest to the physician or general practitioner who is called upon to differentiate its symptoms from those of other peritoneal diseases, and to relieve the great pain to which it commonly gives rise. It is, however, to the practical surgeon that all three must turn for their knowledge of the subject, and for the cure of the patients. My attention was early directed to the condition by a very unfortunate case, which I have recorded at length in the *Trans. of the Pathological Society of London,* and in a paper published in the *Med. Times and Gazette* more than ten years ago. The completion of six hundred cases of ovariotomy, among which I have met with no less than fifty-seven cases of twisted pedicle, seems to afford a fitting opportunity for giving to the profession the facts observed.

[Mr. Thornton's paper contains in tabular form the particulars of 57 cases of twisted pedicle, and some very interesting remarks upon the various theories as to the etiology of the condition. He says:]

First, we have interference with the circulation; the firm arteries, resisting pressure, continue to pump in blood, which the yielding veins cannot return quickly enough, so that congestion with exudation of serum, rupture of vessels and extravasation of blood, and rapid enlargement of the cyst result. These processes are accompanied by acute pain, chiefly referred to the pedicle, and due to the pressure to which its nerves are subjected, but also in extreme cases extending over the whole surface of the tumour; also by reflex symptoms, such as vomiting and collapse, and by fainting and pallor, the result of the internal hemorrhage. The strong fibrous covering of the tumour prevents rupture of the external vessels, and in the majority of cases confines the effused blood; but if, as sometimes happens, previous inflammatory changes in the cyst-wall have caused blocking of vessels and deficient nutrition of portions of its substance, these, being soft and lacerable, give way, and the mixture of ovarian fluid, serum, blood and clot is poured into the peritoneum. This accident is often speedily fatal; but in many cases, the pedicle vessels being closed by clot, the hemorrhage ceases, the effused matters, after causing more or less peritonitis and effusion of parts, are absorbed, and the patient slowly recovers, till the rent in the cyst heals, and the adhesions affording a new blood supply, the tumour starts growing again. Exactly a fifth of my cases had no adhesions; several of these were only partially twisted, and in only one of the non-adhesive tumours was the pedicle completely obstructed, and in that one there was a very clear history of a gradual twist, the symptoms recurring at each monthly period.

It seems perfectly clear that whatever amount of twisting there may have been going on, it is only when the acute stage is reached that the peritoneum becomes involved and adhesions take place. Thus, when operating, one could by the nature and strength of the adhesions usually fix pretty nearly the length of time which had passed since the acute stage; just as one can say, this patient has had several successive attacks, being guided to this conclusion by the varying condition of the extravasated blood.

The adhesions are pathological in their origin and in their after-growth, for without them the tendency would be toward atrophy; whereas, through them the tumour speedily obtains a fresh blood-supply and starts into fresh activity. They have also more immediate ill-effects, leading, in some cases, to discharge of the cyst contents into the bowel or bladder, and in others, to fatal obstruction. Then, when ovariotomy has to be performed, they somewhat, though not greatly, increase its immediate risks, and also

those more remote, such as recurrence of growth and obstruction of intestine.

The immediate mortality of ovariotomy in these cases is not much, if at all, in excess of that of any large number of cases of other nature. Four only of the fifty-seven died, and two of these deaths were certainly due to infection of the cyst contents by tapping rather than to the mere rotation or its effects on ovariotomy.

If the patient be known to have an ovarian tumour before she suffer from any of the symptoms there described, their appearance should at once put her medical attendant on his guard, and cause him to seek for confirmatory evidence in support of the suggestion they make, prepared to advise early ovariotomy if the diagnosis is strongly probable or certain.

If the presence of the tumour be not suspected before the acute attack, it may be much more difficult to make a diagnosis, because the patient will be in such pain that examination is difficult or impossible, and the peritoneal symptoms may rapidly supervene and mask those more directly due to the rotation. Any sudden attack of pain in the situation of either ovary, especially if it occur in connection with menstruation or pregnancy, should be a ground for a careful bimanual examination at the earliest possible opportunity, when the tender, twisted pedicle will very probably be felt to one or the other side of the uterus. I was able to feel it distinctly before operation in a large number of my cases, and have no doubt it would have been more readily detected in others, had they come under my notice while it was tender, and before it was masked by surrounding adhesions.

The other symptoms which are important in making a diagnosis are sudden increase in the size of the tumour, usually accompanied by faintness, pallor, quick pulse and other signs of internal hemorrhage. These symptoms are often accompanied or quickly followed by those of peritoneal disturbance, tympanites masking the tumour, nausea or vomiting of green or bilious fluid and difficulty in passing down the flatus which has rapidly accumulated in the bowels, from the muscular coat losing tone as a result of the peritonitis. Sometimes there is hemorrhage from the uterus, but this is not a constant or even a common symptom. If any portion of the cyst-wall has become soft and diseased, from the blocking of vessels already referred to, it will very likely give way, increasing the peritonitis; then, as this subsides, the tumour will have become smaller or perhaps have disappeared, with diarrhœa or profuse flow of urine. The illness brought about by this acute stage of the twist may pass off quickly or may last many weeks; and the nature and extent of the adhesions probably depend upon the longer or shorter duration of the peritonitis.

If it were possible to make an immediate diagnosis, I think there can be no doubt that the proper course would be immediate

ovariotomy before peritonitis sets in; if, however, the symptoms of collapse and hemorrhage have passed, and those of acute peritonitis become marked before the surgeon sees the patient, I am certain he will be wise to hold his hand and let the acute stage pass before performing ovariotomy.

If there is reason to believe that hemorrhage is still going on and the patient's life is obviously in danger from this cause, all risks must be faced and ovariotomy performed. Such a case was No. 21 in my table, but the peritonitis continued and became more general after operation, the patient sinking in forty-one hours from obstruction of the intestines. The more I see of abdominal surgery the more I am convinced that operation during acute peritonitis is very dangerous, whereas, in the subacute or chronic stage, the patient bears operation as well or better than with a perfectly healthy peritoneum.

There is abundant evidence that rotation of an ovarian tumour is, in a certain number of cases, an accident immediately dangerous to life; but so is any operation during acute peritonitis, and the large number of cases which I here record shows that the majority will get over the acute attack if kept quiet and properly treated, and may then be operated upon with as good a chance of success as if the rotation had never occurred. Most likely, the majority of the cases that die would get well if the condition was correctly diagnosticated and treated, absolute rest, ice to the head or to the abdomen to keep down the temperature, opium to allay pain and control the peritonitis and careful rectal feeding and stimulation to support the strength being the leading indications.—*American Journal of Medical Science, October* 1888, *p.* 357.

92.—TRANSFUSION OF THE NORMAL SALINE SOLUTION.

By Walter Henry Brown, F.R.C.S.I., Assistant Surgeon to the Leeds General Infirmary.

I was first called to see Mrs. H., aged forty-seven, on Dec. 26th, 1888. I found her in a condition of extreme exhaustion, surface cold, lips pale, pupils dilated, pulse 140, and barely to be felt at the wrist; the history of the case being that for the past eighteen months she had bled continuously from the vagina. On examination I found a large polypus filling up the vagina, and having a very broad attachment. Her condition was such that the mere digital examination produced an increase of depression, and I thought she was dying. For some hours prior to my seeing her she had vomited continuously. Under the circumstances I felt that to attempt to deal with the polypus then would be fatal. I therefore procured an Aveling's transfusion apparatus and injected twenty-five ounces of the normal saline solution into the median cephalic vein, with the result that in a few minutes she

rallied, the pulse became perceptible, and her aspect improved. After two hours she swallowed and retained a little milk-and-egg mixture. Three days afterwards she had so far recovered that I was enabled to remove the polypus. Her convalescence has been very slow; but she is now gaining strength more rapidly, is able to be up the greater part of the day, takes food well, and is no longer in need of treatment.

Remarks.—I have purposely avoided recounting any details as to daily progress, &c., because my object in relating this case has been merely to place on record the result of the transfusion. I have on five previous occasions transfused, each time using human blood in quantity varying from six to twelve ounces, and the result has proved unsatisfactory. The normal saline fluid answered so well in this instance that its employment would seem to me to be indicated in all cases where the operation of transfusion is called for, as a supply can be so readily obtained.—*Lancet, March* 16.

93.—ON IMPROVED CÆSAREAN SECTION.

By Henry J. Garrigues, A.M., M.D., Obstetric Surgeon to the New York Maternity Hospital.

[Dr. Garrigues publishes a successful case of Cæsarean Section in which both the mother and child were saved. The following is Dr. Garrigues' description of the operation performed after the most recently improved method.]

The best time for the operation is as soon as labour pains have become strong and frequent.

The first part of the operation is identical with that of ovariotomy. The bowels and the bladder having been emptied, and the pubes shaved, the abdomen is washed with soap, ether, and 1:2000 solution of bichloride of mercury. The vagina is syringed with two quarts of the same solution, and thoroughly rubbed off with cotton dipped in it, which is best done with a Sims's speculum, and in his position. The operator and his assistants disinfect themselves and the sponges with the solution. The instruments are kept in carbolic acid solution (two and a half per cent.). The temperature of the room ought to be about 80° F. The patient is placed on her back, on a long narrow table covered with a mattress, quilts or blankets, a rubber sheet or oilcloth, and a common sheet. Her legs are bent at the knees, and the feet placed on a stool at the end of the table, so that the assistant who takes care of the rubber tube may have easy access to the uterus without being in the way of the operator or the other assistant. She ought to be warmly dressed. She is anæsthetized. The field of operation is surrounded by four towels wrung out of carbolized water (two and a half per cent.). The operator stands to her right,

and his chief assistant to her left, the one who anæsthetizes at her head, and the one who has charge of the constrictor at her knees.

By percussion the operator ascertains that no intestines are present between the uterus and the abdominal wall, or pushes them aside. An incision is made in the median line through the skin and the linea alba from the umbilicus to a point an inch and a half above the symphysis pubis. Bleeding vessels are clamped by means of compression forceps. Next the peritoneum is lifted up with two such pairs of forceps, and a small incision made in it, through which the index is passed into the abdominal cavity, and the peritoneum slit open to the same extent as the incision in the skin. The incision is carried through the whole thickness of the abdominal wall up to the left of the umbilicus, just enough to allow the uterus to be pulled through. The uterus may be helped out by pressure from the vagina, and one of the corners is pulled out first. Before doing so, long silk sutures are inserted at an inch distance from one another through the lips of the abdominal incision above the umbilicus. The two ends of each are clamped or tied together. As soon as the uterus is lifted out it is wrapped up in cloths wrung out of a warm solution of bichloride (1 : 10,000). The sutures are closed. A finger-thick rubber tube, half a yard long, is laid loosely around the cervix, and a flat sponge placed in front of and behind the uterus. The moment the operator puts the knife to the uterus, the lower assistant tightens the constrictor. An incision is made in the median line of the uterus so as to avoid the cervix, but long enough to allow the hand to be introduced and the child to be withdrawn with ease, say four and a half to five and a half inches. This incision is best begun with a convex sharp-pointed bistoury, and continued with a probe-pointed one. If the placenta is in the line of incision it is cut through, together with the uterine wall.

If the waters have not broken, the operator tears the membrane near the lower end of the incision so as to prevent the escape of the liquor amnii, especially if it is decomposed, into the peritoneal cavity. The operator introduces his hand immediately through the rent and seizes, if possible, the head of the child, if not, the breech or the feet. The cord is tied, and the child given to a competent nurse, or, preferably, a doctor, who, if it is asphyxiated, uses proper remedies for its revival.

Now deep silk sutures are inserted half an inch from the edge through the uterine wall, except the decidua. The distance between the sutures ought to be about three-quarters of an inch. The ends of each suture are clamped or tied together.

Next the after-birth is removed by peeling the membranes off in one piece. If there are any clots in the uterus, they are turned out and the inside is washed with bichloride and dusted with iodoform.

Next the deep sutures are closed, the assistant approaching the

edges by means of two tenacula and folding as much as possible of the peritoneal covering in between the edges. Thereafter fine silk sutures are passed superficially between two and two of the deep ones, only comprising the peritoneum. If this is movable enough the needle is passed in half-an-inch from the edge, out on the same side a quarter of an inch further in and reintroduced in the corresponding points on the opposite side of the incision. While they are being tied the assistant takes off the strain with two tenacula. A hypodermatic injection of fluid extract of ergot or two grains of ergotin is made on the extensor side of the left forearm. The rubber tube is loosened very slowly and left in place. If there is any hemorrhage from the wound that does not stop on simple pressure with a hot sponge, extra sutures are passed under bleeding spots. If this cannot be obtained by the simple interrupted suture, a so-called mattress suture may be substituted. A curved needle is introduced in the usual place, passed under the bleeding sinus and out on the same side. A similar suture is inserted in the corresponding point of the other lip, and in tying the sutures the two upper ends are united, and so are the two lower ones. The uterus is squeezed, and if the hemorrhage continues an intrauterine injection of solution of bichloride (1 : 5000) is given so hot that the hand can just be held in it (110° to 115° F.). In exceptional cases injection of tincture of iodine or diluted liquor ferri chloridi (1 : 10), or faradization might be called for. When the hemorrhage is controlled the constrictor is removed.

The peritoneal cavity is cleaned with sponges held in long forceps, and if decomposed liquor amnii, meconium, or other dangerous material has got into it, it is washed out with plenty of plain warm water. The uterus is replaced, and the omentum pressed up above it. The abdominal wound is closed with deep silk sutures comprising the whole thickness of the wall, and special attention is paid to include the aponeurosis of the muscles and the peritoneum. They are passed at intervals of an inch, and superficial ones, through the skin alone, between them.

Dressing.—The wound is dusted with iodoform, covered with a piece of gutta-percha tissue, a pad of iodoform gauze, and a thick layer of borated or salicylated cotton fastened with broad straps of rubber adhesive plaster to the sides of the abdomen. The usual belly-binder is put on.

The genitals and anus are covered with a pad of absorbent cotton or lint wrung out of bichloride (1 : 2000); outside of that is placed a piece of gutta-percha tissue, then a layer of dry cotton batting, and a piece of muslin is fastened to the belly-binder in front and behind.

After-treatment.—The patient is placed in a bed with bottles filled with hot water. As soon as she can swallow she is given

alcoholic drinks, or hot strong coffee. Pain is subdued by small doses of morphia. After the patient has recovered from shock she may have light liquid food, and after a few days meat and other solid food. The urine is drawn with a catheter if she cannot pass it herself. The bowels are kept open by enemas or aperients.

If the temperature rises, it is combated by antipyrin, quinine, salicylic or carbolic acid, and cold applied to the head and abdomen by ice-bags or rubber coils. Vomiting is treated with coffee, tincture of iodine, bismuth, hydrocyanic acid, strychnia, creasote, carbolic acid, carbonic acid water, counter-irritation over the pit of the stomach, &c. Peritonitis is either treated with large doses of morphia, or perhaps preferably with a saturated solution of a saline aperient (L. Tait). If a collection of pus in the peritoneal cavity can be diagnosticated, the lower end of the abdominal incision is reopened, an opening made in the vaginal cul-de-sac and drainage established, combined with antiseptic injections; or an incision is made in the vagina and drainage established in that way. A weak and frequent pulse due to anæmia and weakness of the heart calls for hypodermatic injections of digitalis or camphor dissolved in ether, or intravenous injection of a weak alkaline solution of chloride of sodium.

In favourable cases the abdominal dressing may remain undisturbed for a week or ten days. Then the sutures are removed and replaced by long, narrow strips of rubber adhesive plaster. The perineal dressing is changed every six hours, and the genitals syringed outside with bichloride (1 : 2000). No vaginal douche is given under normal circumstances. If the lochia become fetid and the temperature rises, the vagina is syringed every three hours, and even an intrauterine injection given as in other cases, followed by an intrauterine suppository with iodoform.—*American Journal of Med. Science, May* 1888, *p.* 452.

96.—ON THE REMOVAL OF CARCINOMA OF THE BREAST.

By Samuel W. Gross, M.D., LL.D., Professor of Surgery in the Jefferson Medical College of Philadelphia.

In no operation for malignant growths is the requirement to go far beyond the apparent limits of the disease so urgently demanded. This is shown not only by the pathological facts as to a regional dissemination and the common recurrences after operation, but also by the anatomy of the healthy gland. The normal limits of the breast are very uncertain. Small, scarcely perceptible lobules frequently lie at some distance from the main body of the gland, particularly in the axilla and just below the clavicle. In one case I found an affected portion near the shoulder, and it would not have been discovered in the ordinary methods of operating. It is

for these reasons, as well as on account of the want of success that attended my earlier partial and incomplete operations, and the fact that the experience of centuries has demonstrated that recurrence takes place in the tissues that are left behind in the old operation, that for nine years I have amputated the entire breast with its coverings, and invariably cleared out the axilla. In the old operation, the nipple and a portion of the skin are included in two oval incisions, the flaps are raised, the mamma is then rapidly dissected or torn from the pectoral fascia, the vessels are secured, a drainage tube is inserted, and the edges of the wound are united with sutures. The surgeon congratulates himself upon having done a neat bit of work, and the patient is pleased with the rapidity of her recovery. But beneath the flaps so neatly apposed are hidden the germs of recurrence in the fat and pectoral fascia that remain behind, and in the lobules, which I have more than once seen operators overlook. In these cases, axillary glands were also removed, if they were felt prior to operation, but the surgeon was unmindful of the fact that many glands might be buried in the axillary fat, where they could have been detected if the incision had been prolonged, and the finger had even carelessly searched for them. Such is the ordinary procedure of ridding a woman of so formidable a disease; such is the operation which has cast an opprobrium on surgery from which it will take many years to recover; such is the operation which we have to thank for the large percentage of recurrences, for the fatal progress of the disease, for the great injustice done our patients, and for the harmful impression made upon the laity, and not a few of the profession, as to the inutility of interference.

In exceptional cases, as when the patient's life is threatened by repeated bleeding, by exhausting and offensive discharges, and by great suffering, the partial operation is eminently proper to afford temporary relief. If the aim, however, be to effect permanent riddance, the knife must be employed with no sparing hand; all tissues, namely, the skin, paramammary fat, the entire gland, pectoral fascia, and axillary contents, which long and accumulated experience has demonstrated to afford the seats of recurrence, must be freely extirpated.

With this object in view, even in the most favourable of all cases, or one in which the tumour is of moderate volume, no matter what its situation may be, and devoid of superficial and deep attachments, and the glands cannot be felt before operation, the procedure to which I have resorted in 43 cases may be thus outlined, strict aseptic precautions being observed throughout:

The entire mammary region having been carefully palpated, while the patient is supine, in order to discover any outlying lobules should they exist, a line is drawn with an aniline pencil around the entire circumference of the breast as a guide for the knife. If the

tumour be peripheral, the incision must extend for at least one inch beyond its apparent limit. A stout large knife is then carried along the line down to the pectoral muscle, spirting vessels are temporarily controlled with the fingers of the assistant, or with clips, or forcipressure forceps, and the breast is removed along with the pectoral fascia, through which the muscle is exposed as if for class-room demonstration. The vessels having been permanently secured with catgut ligatures, the fat around the line of the incision is carefully explored for any outlying nodules of disease, a precaution, the observance of which will be made apparent when I state that in three of my cases they were found, thereby showing to what extent the disease may disseminate itself even in apparently simple cases. Any remaining nodules having been removed, the pectoral muscle is now carefully examined with the eye and fingers for nodules. If present they should be freely removed, and the wound seared with Paquelin's cautery. The large exposed surface having been protected with an asepticized towel, the arm is carried outward and upward to rather more than a right angle with the trunk, and an incision is prolonged into the axilla about three-quarters of an inch below the lower border of the great pectoral muscle, through which the deep fascia is opened to the same extent as the cutaneous wound. If there happen to be a number of small glands or two or three large ones, and they are not united to the surrounding tissues, their removal, along with the entire fatty contents of the axilla, can easily be effected with the fingers and scissors. When, however, as more frequently happens, the glands and other axillary contents are converted into an inseparable mass, they will have to be dissected out with the knife, and scissors curved on the flat. In performing this step of the operation the lower portion of the mass and that which adheres to the side of the chest, and pectoralis minor, and surrounds the intercosto-humeral nerve and other superficial nerves should first be separated, and we should carefully work our way up to the apex of the space, including every vessel, arterial or venous, between the two ligatures before dividing it. Unless this precaution be observed large venous trunks are liable to be cut or lacerated close to their points of entrance into the axillary vein, an accident which will be followed by troublesome hemorrhage. The most difficult part of the operation is the separation of the glands from the axillary vein as it lies under the pectoral muscle. In many cases this can be effected with the fingernails, the arm having been brought toward the trunk ; but when they are firmly incorporated with the vein, provided the adhesion exists to a limited extent, the corresponding portion of the vessel should be removed between two ligatures. Glands which are attached to the vein immediately beneath the clavicle are best reached by carrying an incision in the interval between the sternal and clav cular origins of the pectoralis major muscle, as in the

operation for ligation of the first portion of the axillary artery. Such a procedure will do away with the necessity for division of the pectoralis muscle, which is recommended by Verneuil. Finally, the mass is brought down and the dissection continued until it is separated from the posterior boundary of the axilla, great caution being exercised lest the subscapular artery, vein, and nerves be injured, thereby avoiding hemorrhage and impairment of the movements of the arm. Should the axillary vein be wounded, if the injury be slight, hemorrhage may be prevented by including the opening in the grasp of forcipressure forceps, which, as I know from experience, need not be retained longer than two days; should the injury, however, be extensive, a ligature should be cast around the vessel on each side of the opening.

The parts are now thoroughly irrigated with the 1 to 1000 solution of corrosive sublimate, and the edges of the wounds are brought as thoroughly as possible into apposition. If the breast flaps be raised from the subjacent parts for an inch and a half or two inches, one will be astonished to find how nearly the wound may be closed in corpulent women with large breasts, in whom before approximation the exposed surface was as large as a dessert plate, and how accurately the wound can be united in thin women with small breasts. In the former class of patients, I first insert two or three of Macewen's button sutures at the bases of the flaps, and then approximate the free edges with the continued suture. In this way the edges of the largest wounds may be brought so nearly together, that a space not exceeding two fingers' breadths in width will have to unite by the process of granulation. A hole having been punched through the most dependent portion of the posterior axillary flap, into which a glass drainage tube is inserted, the edges of the axillary wound are coaptated by the continued suture, the material for the suture being heavy sublimate silk. When it is possible to bring together the edges of the wound, a drainage tube is employed; otherwise it is not required. Before applying the outer dressings, a description of which is unnecessary, both wounds are again thoroughly washed out with the corrosive solution. The drainage tube is removed at the end of twenty-four hours, and the stitches are taken away on the eighth day. If the wound has been a partially open one moist antiseptic gauze is continued until it has fully cicatrized, which requires from 4 to 6 weeks.

When, as usually happens, it is possible to bring the edges of the wound in apposition, it is closed with the continuous chromicized catgut suture, and painted over with iodoform collodion. At the expiration of eight or nine days, when the crust will have become detached, the union will be found to be perfect.

Such is the radical operation which I have practised for some years, so radical, indeed, that I fear that, for the present, it will not gain many adherents. Thus, in a discussion on immediate

reunion in amputation of the breast, at the Société de Chirurgie, 1885, Lucas-Championnière, Polaillon, Marc Sée, Tillaux, and Trélat declared against free removal of the skin, and Polaillon even went so far as to assert that it did not influence recurrence. Verneuil and Després, on the other hand, were in favour of removing the skin largely, and leaving a partially open wound, through which, the drainage being excellent, erysipelas and other wound complications were prevented. In the remarks on Banks's paper at the Harveian Society, in the spring of 1887, in which that surgeon reported 82 cases of extirpation of the breast along with the axillary contents, Bryant and Butlin questioned whether the complete operation afforded better results than the incomplete, and Butlin, Pick, and Cripps held that clearing out the axilla in every case was neither necessary nor judicious, although Pick asserted that the skin should be freely removed. Owen was the only member who gave cordial support to the procedure urged by Banks, the prevailing opinion being that the operation was attended with an excessive mortality, and did not lessen the risk of recurrence.—*American Journal of Med. Science, April*, 1888, *p.* 349.

95.—ON RAPID DILATATION OF THE CERVIX UTERI.

By Alexander Duke, F.K.Q.C.P.I., Gynæcologist to the Steevens's Hospital, Dublin.

One of the greatest strides made by the gynæcological branch of surgery has been the substitution of rapid dilatation of the cervix uteri in place of the slow, uncertain, and dangerous methods by the use of the sponge-tent or sea tangle. The antiseptic treatment has certainly contributed much to this advance, and has thus made the older plans of dilatation a thing of the past . We can now effect in almost as many minutes what occupied the same number of hours to accomplish previously, and I think with less pain to the patient, less trouble to the doctor, and a vast saving of time and anxiety. With a properly constructed dilator, when once carefully introduced into the cervical canal, we have the carrying out of the process of dilatation very much in our own hands, and the subsequent success of the operation depends quite as much on the judgment of the operator, and the time he takes to effect that dilatation, as in the selection of the case itself and the time chosen for interference.

I cannot but think it a great improvement to be able to accomplish with one instrument the combined work of a number, the continual introduction and withdrawal of which must prove a source of irritation even to the most tolerant uterus.

The American gynæcologists have shown that, with ordinary care, rapid dilatation is a safe operation, and can even be partially carried out in the consulting-room. Goodell, in his lectures on

gynæcology, states: "For straightening out anteflexed and retroflexed uteri, and for dilating or shortening the canal in cases of sterility, or of dysmenorrhœa arising from stenosis, the dilator will be found a most efficient instrument."

Professor Munde says in his *Minor Surgical Gynæcology*, "Either the graduated sounds or the divergent dilators may be used, and I most decidedly prefer the divergent dilators, and have seen excellent results from their frequent and careful employment."

Dr. Ellinger, another American authority, says he has "found forcible dilatation a very efficacious remedy for flexions."

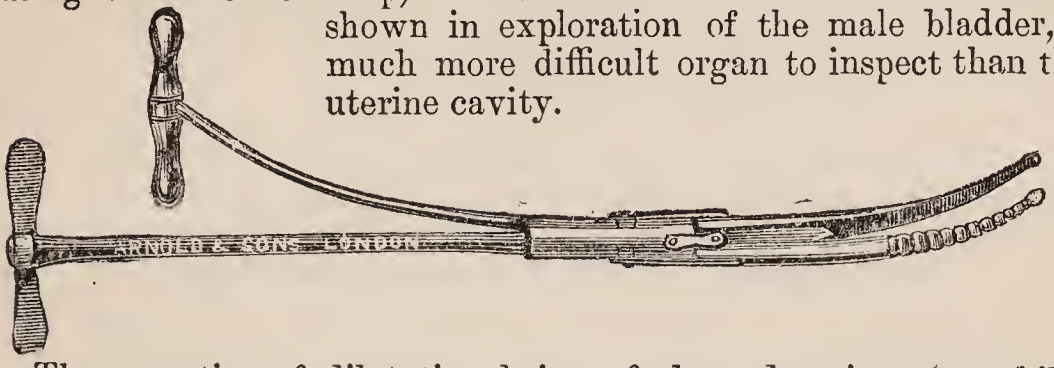
Opinions are much divided as to whether forcible dilatation or the cutting operation is the best to adopt for the cure of stenosis; for my own part I prefer the cutting operation in cases of narrow canal, conical cervix, and pinhole os, reserving the use of the dilator for the purposes of diagnosis (in cases of hemorrhage, for instance, when the cause is doubtful), or when we wish to obtain more room in the unimpregnated organ to explore its cavity, or in cases of incomplete abortion before using the curette. The better means of access we can obtain to the uterine cavity, the better and more rapid will be our treatment of the endometrium, and instead of a long course of caustic applications, or perhaps uterine injections extending over weeks, we can remove by the curette the whole affected surface, keep the canal patulous as long as we like by a suitable flexible spiral wire stem, and so secure the recovery of the patient in one-tenth of the time required by the older methods.

I entirely agree with Dr. Goodell's statement: "I have been surprised at the improvement following a forced dilatation made in cervical endometritis for the easier introduction of remedies. Perhaps this may be explained by the change produced in the nutrition of the parts or the temporary paralysis of the constrictor fibres, just as fissure of the anus is cured by stretching the sphincter."

The dangers of rapid dilatation of the cervix are the lighting up of old inflammatory mischief, which of course contraindicates its employment—cellulitis, subacute ovaritis, metritis, or even peritonitis—so that considerable caution has to be observed, the case properly selected, and the operation only undertaken by skilled hands. The uterus, as a general rule, is a most tolerant organ, but if dilatation or incision be carried to excess it will probably set up a train of symptoms analogous to those observable when laceration of the cervix has taken place during the process of labour, and may even demand a reparative operation to remedy the mischief done by a careless or too zealous practitioner.

The dilators made to divaricate by pressure on the handles are very liable to feather at the points, and unless made of a clumsy thickness are bound to yield by the pressure of the cervical canal.

so that I venture to think the plan of expansion observable in my instrument will supply the desired strength to effect the dilatation required, and when thus room for the introduction of the finger is gained, any more room desired may be had by crowding in an additional finger, which I think will give ample room for exploration. It has struck me that a view of the uterine cavity could be obtained with little trouble in these cases by using the electric lamp, the value of which has been recently shown in exploration of the male bladder, a much more difficult organ to inspect than the uterine cavity.



The operation of dilatation being of short duration, the exhibition of cocaine applied locally will be sufficient to keep any severe pain in check, and a few drops of a 10 per cent. solution injected into the cervix at each side of the os will in a short time allow interference without any complaint on the part of the patient.

The resistance felt by the operator's hand while using the screw of my instrument will be the best guide as to the amount of force to be used in each case, but as a rule ten to fifteen minutes' time ought to suffice for obtaining sufficient room for introduction of the finger, which is more than half the battle.

It is always safer to confine the patient to bed or the recumbent posture for at least twenty-four hours after the dilatation, though slight expansion of the canal can be carried out in the consulting room.—*British Med. Journal, Oct.* 20, 1888, *p.* 873.

96.—DR. DUKE'S NEW SPIRAL-WIRE STEM FOR PRESERVING THE PATENCY OF THE CERVICAL CANAL AFTER THE OPERATION FOR STENOSIS.

The tendency of the os and cervical canal to contract after the operation for stenosis (with a view to the cure of dysmenorrhœa and sterility) must have been observed by every gynæcologist. There are various means adopted to counteract this tendency. Some advise the daily introduction of the sound. This I believe gives rise to a great deal of irritation and sometimes hemorrhage, any newly-cut surface resenting such interference, and the pain produced by the proceeding is sometimes described by the patient as worse than the operation itself, and certainly likely, to say the least, to set up metritis, parametritis, and subsequent cellulitis. Others advise the use of Greenhalgh's india-rubber stem. Its dis-

advantages are the difficulty of introduction, the sound frequently finding its way either through one of the side openings near the point or right through the point itself. Again, there is liability of the openings in the stem to become plugged with clot or discharge, and so prevent drainage of the uterine cavity, thus neutralising one of the principal points of value in the operation. Others cauterise or paint with iron solution or other styptic the newly-cut surfaces, and this, though no doubt successful in some cases in preventing union, has the disadvantage of aiding by its styptic action the subsequent contraction of the canal. Some practitioners plug the vagina directly after the operation, with the twofold object of preventing hemorrhage and, by distending the vaginal walls, press the divided parts asunder and so prevent union. This plan also gives rise to discomfort, retention of urine frequently following on the removal of the plug, and renewal of the same for some time afterwards is anything but pleasant for either patient or doctor. The apparently simple plan of plugging the cervix itself is not so easily accomplished as one would think, and the Greenhalgh stem, though acting well in some cases, is very liable to be expelled by uterine action unless supported by vaginal tampon, the disadvantages of which I have already alluded to.

After some trouble I have endeavoured to design a simple means of keeping the cut surfaces apart, and at the same time allowing free exit for the uterine secretions by stem of spiral wire (nickeled), which I find is well retained as being of a flexible and yielding nature, and is well tolerated by the patient if the proper sized stem be chosen. I generally allow it to remain *in situ* for a week or ten days, the syringe being used daily for that time during the healing process.

The stems are made in various sizes, and I find it useful to have a very large one, as thick at the base as the index finger, for keeping the os and cervical canal open for some time after the operation of rapid dilatation has been performed for subsequent exploration of the cavity, which operation is now fast taking the place of the slow and unsafe process of expansion by sponge tents or sea-tangle.

There can be no difficulty in removing the stem by grasping the last strands of wire with the dressing forceps at either side, and rotating from right to left, thus unscrewing, as it were, from above downwards. The one introducer as sold with stems will do for all. The makers of both dilator and stems are Messrs. Arnold and Sons, West Smithfield, London.—*British Med. Jour., Aug.* 11.

Addenda.

98.—ON FURTHER IMPROVEMENTS IN THE TREATMENT OF MALIGNANT STRICTURE OF THE ŒSOPHAGUS BY TUBAGE.

By Charters J. Symonds, M.D., M.S.Lond., Assistant Surgeon to Guy's Hospital, London.

The short tube which I introduced for the treatment of this disease was shown in use for the first time at the Clinical Society in 1884. Since that time a paper was published, with four cases, giving a further account of the tube, and detailing its advantages and the limits of its usefulness. As, however, no illustration accompanied that paper, and as I am frequently asked concerning the method, the present communication is a reply to this question.

Various improvements have been made in the construction of the tubes and in the method of introduction, and the extended opportunities of the past four years and a half have added an experience which, I think, will prove valuable to others. A new feature in the treatment of the final stage of the disease has been introduced, by which, I think, it will be conceded that patients are made more comfortable than by gastrostomy. Life has been prolonged in all the cases, and in none has the tube caused any evident injury. The effect of this prolongation of life has been to allow more time for the spread of the growth, and so to introduce secondary complications of great severity; at least this seems to me one reason, if not the chief reason, why the patients have such severe pulmonary symptoms. In order to make this paper as complete as possible, I will describe first the short tube and its uses, and then the new one for use in the final stages of the malady.

Short Tube.—This tube is from four to six inches long, and is made of gum elastic on a silk web. The upper end is expanded into a funnel; the lower is rounded and closed. The essentials of a good tube are: (*a*) The wall does not increase in thickness with the increase in the bore. A No. 14 English catheter gauge will thus have a wide calibre. (*b*) The inside of the tube should be polished as well as the outside, to allow of the more easy passage of fluids. (*c*) The eye should be a quarter of an inch from the end, and of large size; and (*d*) beyond the eye the tube should be hollow to the end. (I mention this last point, since tubes have been made with a solid end—a disadvantage which I will presently point out.) A piece of plaited silk is passed through about three-eighths of an inch below the rim of the funnel in a single thread, and the portion inside the tube drawn out and tied to the side pieces about two inches above the funnel. (See Fig. 1.) This

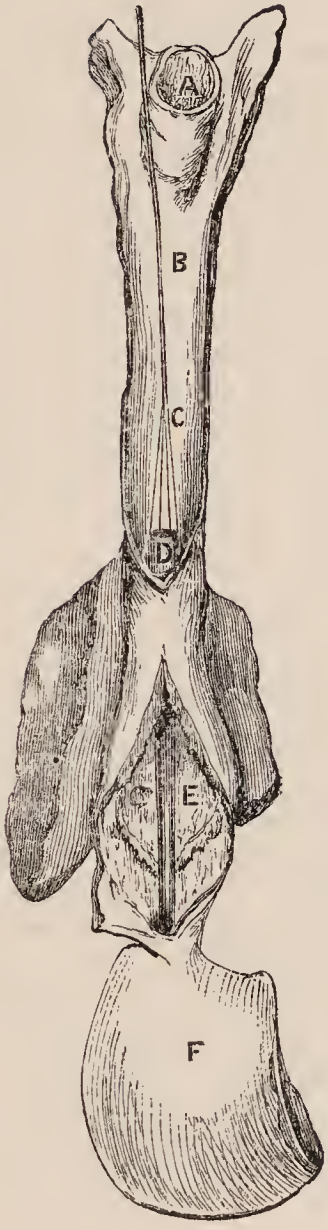
method of securing the silk seems better than two separate pieces, and never leads to blocking of the tube. (The tubes, with all instruments described, are made by Messrs. Down, of St. Thomas's Street, London Bridge, S.E. I specially mention the makers, since tubes of improper construction and badly threaded are often sold by others.)

Object.—The object of the tube is to carry the fluids through the stricture, and thus to enable the patient to drink and so enjoy the taste of his food. This is accomplished by the position of the tube. It rests in the œsophagus, with the funnel upon the upper surface of the stricture. At times, therefore, the funnel will be from eleven to sixteen inches from the teeth. How far this has answered will be seen presently. The length of the œsophagus involved in the disease varies from half an inch to six or seven inches. For this reason it is necessary to have a tube of average length, since it is not always possible to estimate the extent of the disease. Again, the gullet may be narrowed at two points, and thus in some cases a tube of a foot in length will be found necessary. I will explain presently how this may be made in an emergency for any case.

The Introducer.—As originally pointed out, the tube may be inserted by a bougie. The end of the bougie is placed in the funnel, and the tube (previously chilled in cold water to render it as hard as possible) is passed down. The difficulty in this method is that the tube is apt to coil up, and when it is thought to be through the stricture is in reality simply coiled up in the œsophagus above it. Still in some strictures, especially those at the lower end of the tube, no other method will succeed at first, owing to the tortuosity of the passage. The next plan is to use some form of introducer. The cue originally suggested by Mr. Gowan was made of copper wire. I now prefer a piece of whalebone (Fig. 3) as being more supple. Outside the whalebone stem is a gum-elastic sheath. The whalebone fitted with this is passed down to the end of the tube, and the sheath fitted into the funnel. On inserting, pressure is made by the sheath, the whalebone keeping the tube rigid. By this means a tube with an open end can be used, and the danger of pushing the whalebone stem through the end of a tube avoided. I usually employ the bare whalebone stem, as there is less bulk in the patient's throat. The advantage claimed for the wire, that by bending it backwards the tube could be directed along the pharynx, does not seem of so much importance as was first thought. Gentleness being as much essential to success here as in the urethra, it is not necessary always to use the gum-elastic sheath to press down the funnel, provided the end of the tube be sound and will bear a moderate amount of pressure. Such an addition can be made by anyone possessing a No. 12 catheter. The necessity of a hollow end is now seen, for when

FIG. 1.

FIG. 2.



Tube in position.
Œsophagus laid open from behind.
A, Laryngeal aperture.
B, Œsophagus.
C, Silk.
D, Funnel end of tube.
E, Lower end of stricture.

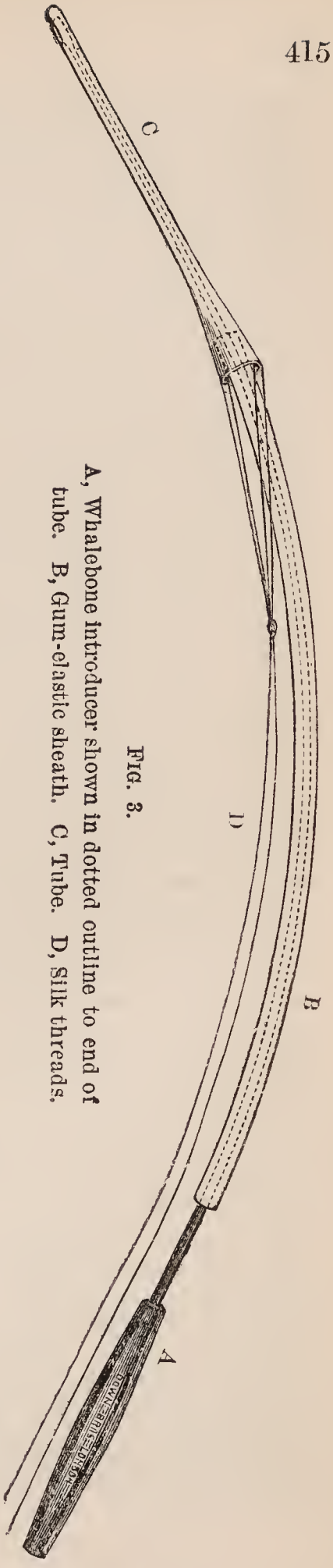


FIG. 3.

A, Whalebone introducer shown in dotted outline to end of tube. B, Gum-elastic sheath. C, Tube. D, Silk threads.

solid up to the eye the introducer is apt to slip out and injure the œsophagus when the sheath is not employed.

The Introduction.—First ascertain by a large bougie the exact position of the stricture—i.e., the number of inches from the teeth; then pass the largest conical bougie possible, and judge by this the size of the tube to be used. Fitting now the introducer, mark on it the distance to the stricture, or make a knot in the silk and insert with the head thrown well back. When it has entered the stricture, send the tube down slowly till arrested by the funnel, and withdraw the introducer. The silk being held taut, the tube is kept in contact with the introducer. When the stricture has become dilated, there is a danger of passing the funnel through altogether if it is a small tube. This will not occur, as a rule, with a No. 14, which is about as large a size as it is wise or necessary to use in malignant disease. Such an accident may be avoided by accurately measuring the position of the stricture on the introducer, and by passing the tube down five inches after reaching the stricture. One can, however, always feel when the funnel is entering the narrowed part. It is essential to *avoid hurry* and *force,* to withdraw at once if there be a spasm, and to keep in the *median line.* The silk is now tied round the ear, and fixed behind by a piece of strapping.

Accidents.—The silk may be bitten through and swallowed; it then falls into the funnel and obstructs it. When this first happened to me, I pushed the tube through the stricture and inserted another. Dilatation having been effected, no difficulty was experienced and no inconvenience felt from the tube. In a recent case I managed to hook up the silk by a piece of copper wire. The hook in the wire was passed into a tube and then protruded. I have also had a pair of forceps made for the same purpose. As a rule, the tube may safely be pushed into the stomach. In one case related to me such a tube was passed in sixteen days. To prevent this accident, select the side where there are fewest teeth, and if none are wanting, the silk may be covered with a piece of small rubber tubing. The silk must, however, be watched. In a recent case it was quite sound after two months' continuous use. In some cases it will be justifiable to extract a tooth in the upper jaw.

Durability.—The longest time I have left a tube in without removal was two months. This patient, whose case I have mentioned, lived in Devon. When removed (No. 14), the tube was still pervious and useful. I, however, put in a new one, as she had so far to go. A German writer upon these tubes, Dr. Renvers, has employed horn, since he found the tube cracked. I can only think that his material must be inferior to that with which mine are made, as I have never found such a result occur after an extended use of these tubes. While this is the form of tube most

generally useful, several varieties have been constructed for me and for others. I have had some made with the lower end open to allow a freer flow of the fluids, but this shape has not in my experience possessed any advantages over the ordinary form, provided the eye is large and the other features as detailed above. If we can estimate the length of the stricture exactly, as is occasionally possible, then a tube an inch and a half long with an open end would be the best form to employ. Such a modification has been employed by my colleague, Mr. Clement Lucas. Dr. Renvers made trial of the tubes in Professor Leyden's wards in Berlin, and has used tubes of horn and hard rubber two inches in length with complete success. These materials, he states, did not give rise to any inconvenience from their inflexibility. Dr. Renvers had them made with the antero-posterior diameter of the funnel smaller than the lateral to facilitate removal. This is, I think, a distinct improvement, as occasionally there is difficulty in removing a tube, owing, in old people, to the projection of the cricoid, and I have adopted it. In the great majority of cases, however, the round funnel answers perfectly well.—*Lancet, March* 30, 1889, *p.* 622.

99.—ON THE MECHANICAL TREATMENT OF MALIGNANT STRICTURE OF THE ŒSOPHAGUS.

By Charters J. Symonds, M.D., M.S.Lond.

[Mr. Symonds publishes the details of twelve additional cases of malignant stricture of the œsophagus treated by tubage, with the occasional use, in a few of the cases, of the bougie. The total duration of the cases were as follows, 12, 8, 5, 15, 13, 9, 5, 18, 13, 13, 7, and 4 months; and the duration of the cases after treatment was respectively, 2 months, 20 days, 2, 2½, 9, 4, 6, 1, 11, 7, 6, 1, and 1 month.]

The mechanical treatment of this disease divides itself usually into two periods: first, that in which pure dysphagia exists; and, secondly, that in which swallowing is accompanied by spasmodic cough—a symptom indicating pulmonary complication. During the first and longer period four methods may be employed: (1) the passage of bougies twice a week; (2) the use of a long tube; (3) the use of a short tube; and (4) gastrostomy. So long as a patient can take solids even finely minced, the use of a bougie will for some time maintain the channel. When the swallowing of fluids becomes difficult, then at once a short tube should be inserted in preference to the long feeding tube. Unfortunately we frequently do not see cases till obstruction has become complete and the passage of a bougie impossible. Under these circumstances I have usually succeeded in the following way. The œsophagus is emptied by passing a bougie; then all fluids except sufficient to quench the thirst are withheld, and the patient supported by ene-

mata containing opium. He is confined strictly to bed and kept warm. After two days a further attempt is made while he is under the moderate influence of morphia administered subcutaneously. Spasm is relieved, and, as a rule, a bougie can be passed. If possible, a short tube (No. 8 or 10) is inserted, but if the passage is too tortuous to admit of this, then a long feeding tube—silk web—is passed, and retained for a week if possible. This will straighten the passage and enable a short tube to be introduced. As a rule, the patient can then be conducted safely and comfortably to the period when cough ensues on deglutition, and, if this complication does not occur, till the close of life. The tubes should be increased in size at intervals of a week or ten days, until No. 14 is reached, and this retained as long as possible. In one case it acted well for three months. The cases here summarised give details of treatment, and show the grounds for preferring this method to any other. In a few cases, no doubt, the stricture cannot be traversed by any means at our command. I have met with this difficulty in one case only. Here the disease was at the beginning of the gullet, and had destroyed the entire wall for three inches, so that on entering the cavity it was impossible to hit the distal end. This man, however, was able to take plenty of nourishment, and therefore did not require gastrostomy. As to gastrostomy, I hold, as a result of my experience, now fairly extensive, that it is unnecessary in the early stages, tubage being preferable and giving far more comfort. There may, however, be a case now and then in which tubage fails from the first, and in which gastrostomy is the only remedy.

Second stage.—When deglutition causes pulmonary irritation and cough (a very frequent complication) on account of perforation into the trachea, bronchus, lung, or pleura, then all fluids must be removed from the œsophagus. There are two methods of accomplishing this. One by the use of the long tube of Krishaber, or some modification of it, and the other by gastrostomy. Dealing first with the latter method, I would remark that this stage is most unfavourable for recovery; the patient is much reduced, and too often sinks under the operation, even though feeding be commenced at once. This applies with greater force to those cases which have not been obtaining nourishment by tubage previously. A very slight shock is sufficient to overturn the balance and terminate the life. Even too energetic and prolonged attempts at tubage in such cases are unwise. Better to give enemata, enjoin rest, and keep the patient warm for a few days before repeating attempts at tubage or undertaking any operation. I do not at all wish to appear to hold that gastrostomy is an unsafe procedure. Mr. Howse has placed this operation on a sound and successful basis so far as *method* is concerned; but all these precautions have not added much to the success in malignant cases, so far as life is

not added much to the success in malignant cases, so far as life is concerned; the majority succumb.

Next we come to the use of the long feeding-tube permanently retained. I mentioned in the paper referred to in the *British Medical Journal* that I had found the hard tube used by Krishaber and others cause ulceration of the mucous membrane over the back of the cricoid. I have since found the same effect. I also gave my adhesion to the use of rubber tubing, as suggested by Mr. Berry. In one case I tried his method of introduction, and succeeded after great trouble. I think the plan suggested below will be found more easy of application.

New Long Tube.—After many suggestions and experiments I had made a rubber tube of the same pattern as the thick-walled stomach tube used for feeding only, and not for retaining. This has a closed catheter end and a large eye. It was passed in one case by the whalebone introducer and succeeded perfectly. A simple device then occurred to me, by which anyone can make a tube in a few minutes. Take a piece of red rubber drainage tube with a thin wall and a wide bore, and about eighteen inches long; cut one end obliquely and sew it up, thus obtaining a conical end; next cut a large eye in the tube about an inch from the extremity; or two openings may be made. To prevent the introducer catching in the point, fill up the interior where stitched with a plug of cotton wool. Oil the interior of the tube and introducer thoroughly. Glycerine is usually employed. Insert this with the whalebone introducer. Once more it is essential that the wall of the tube be thin, otherwise it may irritate. The outside diameter of the tube need not be more than that of a No. 12 catheter. That such a tube can be borne over the larynx and in the mouth was established by Mr. Berry. My own experience is limited to two cases. In one it was worn with complete comfort for four months and a half. It was once coughed out after a month's residence; a new one was inserted and never removed. Though towards the close of life the man had severe pulmonary complications, with cough and expectoration, the tube was not ejected, nor did it ever give rise to irritation. This, then, overcomes a difficulty with which I have been contending for two years or more. It will enable us to feed our patients without performing gastrostomy. This man fed himself and increased his weight considerably. It is the exception for patients to be spared this troublesome cough on deglutition. If it does not occur, the short tube may be worn till the close of life.

Objections to tubage.—The only objection I have met is the ulceration of the pharyngeal mucous membrane over the cricoid. This occurred after the use of the long black hard tube, and will take place in two days. The glazed surface is fretted off the tube

in that time. Whenever a patient complains of pain in swallowing, and has cough and irritation, when such did not exist prior to the use of the tubes, he will most probably be suffering from this complication. The nasal route used by Krishaber may avoid this, but I think the rubber tube will be the best of all methods. It was thought, when first introduced, that the funnel of the short tube would produce ulceration. In twenty-two cases in which I have now used it the patients never complained of pain. None of them felt the tube, even to No. 16. Of these, I have inspected the œsophagus after death in six, without finding the least evidence of irritation. The observation I have made, that complications are more severe under tubage, seems, as I have said, due to the prolongation of life and the time given for extension of the disease—a proof, if true, that life is prolonged. Once more: Tubage, it was thought, would hasten growth. The previous point, if true, is opposed to this; so I think is another point—viz., that the short tube, by carrying food through the stricture, prevents its decomposition in the œsophagus. The foul material ejected on passing a bougie must have a prejudicial effect on an already ulcerated surface. Tubage may be commenced in any stage of the disease; the existence of ulceration does not contra-indicate the method.

Special causes of difficulty.—The main difficulty in tubage arises from the situation of the disease. The most difficult cases are those in which the lower end is affected. The longest distance from the teeth I have encountered is seventeen inches, others sixteen, fifteen and a half, and fourteen and a half inches. At the lower end, due probably to the effect of the diaphragm, the channel is apt to be tortuous; and, again, on account of the same cause, the spasmodic contraction of the muscle probably closes or modifies the channel. In one case the channel turned abruptly to the right, and then, after a short horizontal course, downwards into the stomach. After passing a tube in one of these cases, and pouring in some milk, such intense pain followed that I feared I had perforated the peritoneum. The man was cold, blue, and almost pulseless, from starvation pure and simple. I withdrew the tube, and after death found that no injury had been inflicted. The pain was due, I imagine, to the entry of cold milk into a stomach long deprived of food. Next time I shall use warm fluid, and very little of it. These difficult cases will be best overcome by passing a short tube on a bougie, so as to retain its flexibility. Another difficulty arises from the extent involved. If from six to eight inches be diseased, a short tube must be from ten to twelve inches long to be effective. I used such a one with complete success in a very bad case. A tube can in such emergency be constructed thus: Cut off the funnel of a tube and draw over it a piece of rubber tube of the required length; prepare the end

as described for the long rubber tube, and insert. Again, much difficulty is encountered when the disease is at the level of the cricoid.

The short tube I have now used in twenty-two cases; of these, seventeen have died under observation, five of which have been already published, while notes of the remaining twelve are also given. Two cases were submitted to treatment for a short time only, and left the hospital relieved, but without tubes, and three are at present under treatment. Of the fatal cases, nine died with the tube in position, swallowing to the last; four were able to swallow without a tube for some time before death; in one a long rubber tube was substituted and worn in comfort for four months and a half. In one other (Case 8) a long rubber tube was used for three weeks after eleven months of the short tube. In two the long tube of Krishaber was used after cough on deglutition ensued, and gave rise to much distress from ulcerations of the mucous membrane over the cricoid. The majority, therefore, wore the short tube up to the time of death, or were able to swallow owing to the dilatation effected. It will be seen that the patients lived variable times after treatment began, depending upon the duration beforehand and on the form of the disease. The longest periods were six, seven, eight, and eleven months. If it be granted, from the evidence of the results of post-mortem examinations and of the patient's sensations, that this form of tubage does not hasten the growth of the disease, then it seems quite clear that patients are more comfortable than after gastrostomy; they die from the unimpeded and unhastened progress of the disease. The majority of cases of gastrostomy succumb, probably not more than one in five recovering. Only once has an accident occurred to me or to my dressers in an experience now of twenty-two cases, and this was not due to any injury inflicted on the stricture, but to a perforation of the pharynx high up. Besides these twenty-two cases, all under prolonged treatment and under various hands, we have treated quite ten other cases by bougies without accident. It may be said, therefore, that there is no danger in passing bougies; a great deal too much stress has been laid upon this point of danger. I have passed tubes and bougies in all conditions, and so have my dressers, without, so far, any accident save the one mentioned, and that occurred to myself, and might have been avoided, and now, with the new introducer, certainly will be in future. The improvement in the patients is remarkable: one man, as stated, gained 19 lb. in ten days, but he was nearly dead before treatment; while others have gained flesh less markedly, all have been benefited. The delight of a man at being able to swallow again is well worth seeing. It seems almost a miracle to him. We last saw under treatment a postman who came unable to swallow. He was admitted for one night and treated as described above. A No. 7 was passed, and he returned to his duties daily. During Christmas

week he was swallowing freely, and a longer tube had been passed. From a perusal of the cases it will be seen that all were able to move about, and some to follow their usual occupation; when this is not laborious it may be carried on till the strength be reduced by the progress of the disease.

Diagnosis.—This disease is so frequently overlooked and so often mistaken for disease of the stomach, on account of the vomiting, that it may be well to add, in a man over thirty-nine, that dysphagia without symptoms of intra-thoracic pressure, accompanied by the rejection of food soon after swallowing, attended with wasting and in some cases the constant expectoration of saliva, is almost sure to be due to a malignant growth in the œsophagus. When blood and a foul odour are found on the bougie, the case is rapid and ulcerating. Auscultation is interesting, but the rushing sound is often absent.

In conclusion, I would claim for this method of treatment—that it is applicable to nearly every case of malignant stricture, and probably to all if seen early enough; that it affords the patient far more comfort than the long feeding tube; that it is superior to gastrostomy in the comfort it secures and in the freedom from danger; that life is prolonged in every case, and as long as after the most successful gastrostomy; that the tube does not give rise to any irritation, being tolerated by the most irritable patient; that, instead of favouring growth, it checks it, by allowing unhealthy fluids to pass from the œsophagus into the stomach; that the use of the short tube—and, when cough on deglutition arises, of the soft rubber tube—will enable us to treat all cases without resorting to gastrostomy.

Note.—I have lately had the pleasure while on a visit to Berlin of seeing the tubes used by Dr. Renvers in Prof. Leyden's wards. He has now employed the method in seventeen cases, and retained a hard rubber tube for six months in one instance. These hard tubes are one inch and a half long and open at the lower end, and are suitable for short hard strictures. I have not myself employed this form, being satisfied with the tube I have described here. Dr. Renvers is disposed to assert that tubes cannot be used by everyone, and that the introduction should be reserved for those practised in the use of œsophageal instruments. The record of my cases show, however, that it is a method capable of being used by anyone, and requires, as a rule, no more skill than does the passage of a bougie, but in many instances all the care and delicacy necessary to successfully traverse a urethral stricture. Not only have several medical men successfully conducted the treatment, but my dressers have also taken charge of cases for me for long periods. Some of my colleagues at Guy's have also taken up this method of treatment.—*Lancet, March* 30, *and April* 6 1889, *pp.* 623, 671.

New Drugs and Food Stuffs.

STERN'S PUMILINE.—Among the many terebinthinate preparations at present before the profession, *Pumiline* is singularly distinguished by its purity and elegance. We have made extensive trials of the Pumiline Lozenges in cases of winter cough with the most gratifying results. The Pumiline Extract forms an excellent application in skin diseases, such as psoriasis, requiring a stimulating form of treatment. We have used it in many cases of this nature with strikingly good results, and without all the disagreeable staining of the skin and linen which detracts so much from the usefulness of chrysarobin preparations. The Extract of Pumiline makes the morning bath invigorating and refreshing, and has proved to be, in our hands, of much benefit in cases of chronic rheumatism. It is prepared by Messrs. G. & G. Stern, 11, Billiter Square, London, E.C.

CHRISTIA.—Mr. T. CHRISTY (of the firm of CHRISTY & Co., 25, Lime Street, London, E.C.), the editor of the very useful publication *New Commercial Plants and Drugs*, has introduced under the name of *Christia*, a substitute for the various waterproof materials at present in use in surgical dressings. The material is certainly one of great elegance, and possessed of a lightness and resistance which compare very favourably with gutta-percha tissue, oiled silk, and other waterproofs now in use. Christia is absorbent and can readily be made aseptic by virtue of the readiness with which it can take up such substances as carbolic acid. In our hands Christia, in addition to being all that is claimed for it as a dressing for general surgical purposes, has proved to be the most comfortable protective material for inflammatory and painful diseases of the skin which has come before our notice.

ROWNTREE'S ELECT COCOA.—Messrs. ROWNTREE, of York, the well-known cocoa manufacturers, have produced in their "*Elect*" *Cocoa* one of the most palatable and agreeable preparations with which we are acquainted. The Elect Cocoa is clearly prepared by a method which, while retaining all the desirable qualities of this popular beverage, excludes those of a less agreeable, if not actually deleterious nature, which so commonly characterise preparations of cocoa offered to the public at moderate prices.

DIGESTIVE TEA.—Apart from such qualities as render it a valuable addition to the dietetic resources of the physician, the *Universal Digestive Tea* is one of the best teas for ordinary use that have come under our notice. The introducers of this Digestive Tea have provided the dyspeptic with a boon, and the general consumer with a tea remarkably free from those properties which sooner or later tend to spoil the digestive organs even of the most robust. It is prepared by the Universal Digestive Tea Company, Limited, 64, Corporation Street, Manchester.

MALCOLM WILSON'S INVALIDS' PORT.—The chemical analysis of *Malcolm Wilson's Invalids' Port Wine* shows it to be rich in substances of the greatest value to convalescents from acute and other diseases. It is a full-bodied and generous wine of remarkable nourishing and stimulating properties, which render it invaluable to the medical practitioner in the treatment of all forms of wasting and debilitating disorders, while its reasonable price makes it accessible to all classes of patients. The wine was awarded a "Certificate of Merit" by a Special Medical Jury, at the Cookery and Food Exhibition, Knightsbridge, April 20th, 1889.—Messrs. HUGHES AND MORRIS, 4, Savoy Street, Strand, London, are the sole importers.

INDEX TO VOL. XCIX.

PAGE

Abscess of brain, Sir W. Stokes on traumatic subdural 27, 284
——— of lung and empyema, Mr. Marsh on the surgical treatment of ... 296
——— of lung and empyema, Mr. Teale on the surgical treatment of ... 300
Acetonuria and its relation to diabetic coma, Dr. West on 92
Aconite in acute dysentery, Dr. Beatson on 69
Acne, Dr. Isaac on Lassar's treatment of 112
Acromegaly, Herr Fraentzel on a case of 1
Acute rheumatism, Dr. Shaw on hemorrhage in salicylism during ... 147
Adenoid disease of naso-pharynx, Dr. Bader on treatment of 54
Adonidine in the treatment of heart disease, Dr. Oliver on 193
Albumen in urine, Herr Zāhor on the quantitative estimation of ... 93
Albumins, Dr. Paton on systematic examination of the urine for ... 237
Albuminuria, Dr. Tyson on its relation to life assurance 131
——— and eclampsia, Dr. Santos on 126
——— intermittent, Dr. C. H. Ralfe on 234
——— intermittent and latent, Dr. G. Johnson on 96
Alcohol, Dr. Payne on changes in the peripheral nerves induced by ... 171
——— and lead, Mr. Porritt on the pathological affinities of 153
Alcoholism, chronic, as cause of liver and kidney disease, Dr. Dickinson ... 6
Alimentary canal and liver, Sir A. Garrod on sulphur in chronic diseases ... 73
Alkalies in the treatment of eczema, Dr. Pearse on 351
Allingham, Mr. H., on a supplement to inguinal colotomy 77
Alopecia areata, Dr. Bulkley on the local treatment of 113
——— Dr. Lassar on the treatment of 113
——— Dr. Leloir upon 112
Amenorrhœa in alcoholic paralysis, Dr. Buzzard on 27
American hip-splint, Dr. Judson on the 256
Amputation of the pregnant uterus, Mr. Lawson Tait on 124
Anæmia, pernicious, Dr. Hunter on the nature of 17, 145
——— puerperal, Dr. Osler on its treatment by arsenic 129
Anal fistula, Dr. Kelsey on the operative treatment of 71, 320
——— Dr. Kelsey on the blind internal 323
——— Dr. Longo on the rapid cure of 70
Analgesic, Dr. Beaumetz on phenacetin as an 19
Angina pectoris, Dr. Gibson on the nature and treatment of 44
Annandale, Mr. T., on excision of bone, 107 ; naso-pharyngeal tumours ... 304
Anterior metatarsalgia, Dr. Pollosson on the treatment of 104
Antifebrin compared with antipyrin, Dr. Cash on 3
Antipyretic, Dr. Dreschfeld's clinical observations on pyrodine as an ... 134
——— Dr. Müller on phenacetin as an 18
Antipyrin, Dr. Cash on its use in acute rheumatism 1
——— Dr. Cash on its action in the urinary excretion 5
——— Dr. Cash on the doses and administration of... 4
——— Dr. Cash on its use in febrile states, and its disadvantages ... 4
——— Herr Wolfe on local anæsthetic action of subcutaneously ... 5
——— M. de Fougeray on the painless subcutaneous use of 6
Antiseptic wound treatment, Mr. Jordan Lloyd on dry 281
Aptyalism, persisting, Mr. Hutchinson on 36
Argyll-Robertson pupil an evidence of syphilitic taint, Dr. Gowers on ... 27
Arsenic, Dr. Osler on treating puerperal anæmia by 129
Arteries of the brain, Dr. Gowers on syphilitic disease of the 157
Arthrectomy, or erasion of the knee, Mr. G. A. Wright on 265
Asphyxia, Dr. Howard's way of raising epiglottis for prevention of ... 61
Asthma, cardiac, Dr. Fraenkel on 46
Ataxia, Friedreich's, Dr. Griffith on its etiology and symptoms 175
Atthill, Dr. L., on the action of certain drugs on the pregnant uterus ... 381
Aural and nasal discharges, Mr. Hewetson on septic dangers from ... 372

Bader, Dr. E. C., nasal polypi 65; nasal stenosis 306; palate-retractor ... 308
Ball, Dr. J. B., on hysterical motor affections of the vocal cords ... 182
"Ballooning of rectum" in stricture of bowel, Mr. Bryant on 319
Barium chloride in heart disease, Dr. Da Costa on 48
Barker, Mr. A. E., on removal of tubercular disease from hip-joint ... 252
Barwell, Mr. R., his inexpensive head-support in caries of cervical spine ... 247
Battle, Mr. W. H., backward dislocations of fingers upon the metacarpus 249
Bennett, Mr. W. H., on a new method for the radical cure of varicocele ... 348
Bismuth salicylate in children's digestive disorders, Dr. Ehring on ... 79
Boric acid and lanolin in skin diseases of children, Dr. Sturgis on ... 118
Bowel and genito-urinary affections, Dr. White on the cold douche in ... 333
——— stricture, Mr. Bryant on "ballooning" of rectum in 319
Brain, Sir W. Stokes on traumatic subdural abscess of 27, 284
——— arteries, Dr. Gowers on syphilitic disease of the 157
Breast, carcinoma of, Dr. Gross on its removal 405
Bright's disease, Dr. Beverley Robinson on dietetic treatment of chronic 243
——— Dr. Loomis on cardiac changes in chronic 195
Brown, Mr. W. H., on transfusion of the normal saline solution ... 401
Bryant, Mr. T., on "ballooning" of the rectum in stricture of bowel ... 319
Buchanan, Dr. G., on the treatment of talipes varus 275
Bulkley, Dr. L. D., on the local treatment of alopecia areata 113

Cæsarean section, Dr. Garrigues on improved 402
Caffeine, Dr. Da Costa on combinations and double salts of 45
——— and salicylate of soda in diseases of the lungs, Ye Gempt on ... 59
Calculus removed from ureter in suppression of urine, Mr. Kirkham ... 341
Callosities or corns, Dr. Unna on their removal from the sole 114
——— corns, warts, &c., Dr. Roesen on the treatment of 114
Calomel, Dr. Dochmann on the treatment of phthisis by 67
——— and digitalis in cirrhosis of liver, Dr. Schwass on 75
Camphor vapour, warm, in acute coryza 52
Carbolic acid glycerine in hyperæmia of the tympanum, Dr. Morpurgo on ... 124
Carcinoma of breast, Dr. Gross on the removal of 405
——— of pancreas, Dr. Suckling on the diagnosis of 72
——— rectal, Mr. Chavasse on sigmoid colotomy in 315
Cardiac asthma, Dr. Fraenkel on 46
——— changes in chronic Bright's disease, Dr. Loomis on 195
——— dilatation, Dr. Loomis on the management of 47
Caries of cervical spine, Mr. Barwell's inexpensive head-support in ... 247
Carlsbad water, Dr. Le Clerq on its influence upon gout 141
Cash, Dr. Th., on antifebrin as compared with antipyrin 3
——— on antipyrin, its administration, uses, action, &c. ... 4, 5
Catarrhal headache, Dr. Seiss on the treatment of 55
Cathartics, saline, in recent pleuritic effusion, Dr. Smith on 202
Cerebral arteries, Dr. Gowers on syphilitic disease of 28
Cervix uteri, Mr. Duke on rapid dilatation of the 409
Champneys, Dr. F. H., on a new operation for vesico-uterine fistula ... 393
Chavasse, Mr. T. F., on sigmoid colotomy in rectal carcinoma 315
Cheadle, Dr. W. B., on the general treatment of rickets 110
Cholecystenterostomy successfully performed by Prof. Socin 72
Chorea, Dr. Handford on the etiology and pathology of 29
Chromic acid in hypertrophic nasal mucous membrane, Dr. Seiss on ... 119
——— its use in excessive sweating 116
Cirrhosis of liver, Dr. Millard on the curability of 75
Club-foot, Dr. Alexander Ogston on the treatment of 266
——— Dr. Buchanan on the treatment of 275
——— Dr. Fairbank's cases of 277
——— Mr. R. W. Parker on the operative treatment of 271
Cocaine, Dr. Moizard's case of poisoning by, with recovery 7
——— Dr. Theobald on its influence upon ophthalmic surgery... ... 370
——— Mr. Nason on its use in the treatment of ulcers 123
——— and chloroform, Prof. Obalinski's method of mixed narcosis ... 8
Codeine in diabetes, Prof. Fraser on the use of 94
——— opium, morpheine, Dr. Fraser on their relative value in diabetes 249
Coccyx, Dr. Ménière on pains in the region of the 106

Colectomy for malignant disease, Dr. Kendal Franks on 76
Colotomy, inguinal, Mr. Allingham on a supplement to 77
——— inguinal, Mr. Cripps on, for malignant disease of rectum ... 311
——— sigmoid, Mr. Chavasse on, in rectal carcinoma 315
Comedones, grouped, Dr. Thin on stimulating applications for 117
Constipation, Dr. Griffith on glycerine enemata and suppositories in ... 214
Corns or callosities, Dr. Unna on their removal from the sole 114
—— warts, callosities, &c., Dr. Roesen on the treatment of 114
Coryza, acute, inhalation of warm camphor vapour in 52
Coxalgia, severe, Dr. Ménière's treatment of 106
Craniotomy, Dr. Donald on the methods of 125
Creasote, Dr. Austin Flint on its value in pulmonary phthisis 66
——— Dr. Beverley Robinson on its use in pulmonary phthisis ... 207
——— Dr. Keferstein on formulæ for its administration 9
Creolin, Dr. Nimopoulos on its use as a germicide 9
——— as an antiseptic in diseases of throat and nose 10
Cripps, Mr. H., on inguinal colotomy for malignant disease of rectum ... 311
Crocker, Dr. H. R., his case of pemphigus vegetans 120
Croom, Dr. J. H., on obstructive dysmenorrhœa and sterility 377
Croup and diphtheria, Dr. Ranke on 55
Cullingworth, Dr. C. J., on puerperal fever as a preventable disease ... 390
Cystitis in women, Dr. Madden on use of dilatation and carbolic acid for 94
Cystotomy, supra-pubic, Dr. Gerster on the transverse incision in ... 102

Da Costa, Dr. J. M., on treatment of valvular diseases of the heart 47, 48, 189
Deafness, labyrinthine, Mr. Field on its treatment by pilocarpin ... 124
Dermatitis tuberosa due to iodine compounds, Dr. Hyde on 361
Diabetes, Dr. Fraser on relative value of opium, morphine and codeine ... 239
Diabetics, gluten bread for, Dr. Woltering's recipe for 95
Diarrhœa and prolapse of children, Mr. Rice on glycerine injections in ... 217
Dickinson, Dr., on aspiration and drainage in purulent pericarditis ... 51
Dietetic treatment of chronic Bright's disease, Dr. Beverley Robinson on 243
Digitalis, Dr. Da Costa on the value of the substitutes for 45
——— in typhoid fever, Dr. Leidy on the employment of 25
Diphtheria, Dr. Hadden on loss of the knee-jerk in 56
——— Dr. Jacobi on the employment of mercury in 57
——— Herr Cholewa on its treatment by menthol 59
——— Herr Hoyer on its treatment by gallic acid and glycerine ... 58
——— Mr. Parker on local measures of treatment... 56
——— Mr. Parker on the method of operating for tracheotomy ... 293
——— and croup, Dr. Ranke on 55
Dislocation, Dr. Ogston on treatment of severe compound fracture and ... 261
Dislocations of the shoulder, Kocher's method in 107
Diuretic for children, Dr. Goldschmid on juniper juice as a 95
Donald, Dr. A., on the methods of craniotomy 125
Douche, cold, in lower-bowel and genito-urinary affections, Dr. White ... 333
Dreschfeld, Dr. J., his clinical observations on pyrodine 134
Duckworth, Sir D., on the remote effects of suppurative otitis 365
——— on typhlitis, its nature and treatment 226
Duhring, Dr. L. A., on cases of typical impetigo simplex 359
Duke, Dr. A., his spiral wire stems for chronic endometritis ... 126, 411
——— on rapid dilatation of the cervix uteri 409
Duncan, Dr. J., on electrolysis in nævus and angiomatous tumours ... 289
Dysentery, acute, Dr. Beatson on the use of aconite in 69
Dysmenorrhœa, obstructive, and sterility, Dr. Halliday Croom on ... 377

Ear, Dr. Bennett on hemorrhage from, as a diagnostic in fracture ofskull ... 108
—— Dr. Marian on foreign bodies in, and their removal from the ... 124
Eclampsia and albuminuria, Dr. Santos on 126
Eczema, Dr. Mapother on an anomalous form of 354
——— Dr. Pearse on alkalies in the treatment of 351
——— Drs. Veiel and Unna on the treatment of 115
——— Lassar's, Unna's, and Gruendler's pastes for 119
——— of anus and genitals, Dr. Lustgarten's treatment of 116
——— of hands, recipe for a pomade for 116

Eczema, infantile, Boeck's treatment of 116
——— local, Mr. Malcolm Morris's definition of 116
Edwards, Mr. F. S., on the treatment of piles by injection 325
Egg albumen solution as a diet in fevers, Dr. Salzer on 10
Eichoff, Dr., on the employment of hydroxylamin in skin diseases ... 117
Electrical internal treatment of dilatation of stomach, Dr. Baraduc on .. 80
Electrolysis, Dr. Duncan on in nævus and angiomatous tumours ... 289
——— Dr. Duncan on results of in the treatment of goitre ... 11
——— Dr. Marshall on the treatment of nævi by 287
Empyema and lung abscess, Mr. Marsh on the surgical treatment of ... 296
——— and lung abscess, Mr. Pridgin Teale on surgical treatment of ... 300
Endometritis, chronic, Dr. Duke's spiral wire stems for 126
Enlarged tonsils, Gleitsmann and Roth on galvano-cautery and ignipuncture 60
Epiglottis, Dr. Howard's way of raising for prevention of asphyxia ... 61
Epistaxis, Dr. Ernyei on oil of turpentine as a styptic in 47
Epithelioma of the colon, Dr. Franks on colectomy in 76
Erasion or arthrectomy of the knee, Mr. G. A. Wright on 265
Ergot, Dr. Atthill on its action on the pregnant uterus 381
Erysipelas, Dr. Nussbaum on a simple method of treating 117
Erythro-melalgia, a neurosis of the extremities, Dr. Morgan's cases of ... 178
——— a neurosis of the extremities, Dr. Weir Mitchell on ... 179
Ether spray, its application for pediculi pubis 120
Ethyl nitrite and its therapeutic uses, Dr. Leech on 138
Excision of bone to promote healing of wounds and ulcers, Prof. Annandale 107
——— of tubercular hip-joint, Mr. Pollard on primary union after ... 108
Extirpation of uterus, Sir Spencer Wells on the statistics of 126
——— of uterus for malignant disease, Sir Spencer Wells on ... 395

Fairbank, Dr., on partial excision of tarsus for talipes equino-varus ... 277
Fatty tumour of the scrotum, Mr. Hutchinson on 95
Fenwick, Dr. S., on acute tubercular peritonitis in the adult 89, 222
Fever, Dr. Salzer on egg albumen solution as a diet in 10
——— puerperal, a preventable disease, Dr. Cullingworth on 390
Field, Mr. G. P., on the treatment of labyrinthine deafness by pilocarpin 124
Fingers, Mr. Battle on backward dislocations of upon the metacarpus ... 249
Fistula-in-ano, Dr. Kelsey on the operative treatment of 320
——— Dr. Kelsey on the blind internal 323
——— vesico-uterine, Dr. Champneys on a new operation for... ... 129
Flat-foot, Dr. Ogston on the operative treatment of 279
Flint, Dr. Austin, on creasote inhalations in pulmonary phthisis ... 66
Football accident called the 'poop,' Mr. Wherry on 260
Fracture, compound, and dislocation, Dr. Ogston on treatment of severe ... 261
Franks, Dr. K., on colectomy for malignant disease 76
Fraser, Dr. T. R., on opium, morphine and codeine in diabetes 239
Friedreich's ataxia, Dr. Griffith on its etiology, diagnosis, and symptoms ... 29, 175
Furuncles, recipe for an ointment for 117
Furunculosis, post-eczematous, Dr. Unna's treatment of 121

Gall-bladder, Dr. Depage on statistics of operations on the 81
Gallic acid and glycerine, Herr Hoyer on treatment of diphtheria by ... 58
Garrigues, Dr. H. J., on improved cæsarean section 402
Garrod, Sir A., therapeutic use of long-continued small doses of sulphur ... 22, 73
Gastro-enteritis as a cause of death in heart disease, Dr. Oliver on ... 49
Genito-urinary and lower bowel affections, Dr. White on cold douche in ... 333
Gibson, Dr. G. A., on strychnine as an antidote in narcotic poisoning ... 187
Gillet, Dr. H., on iron preparations in the diseases of children 13
Gluten bread for diabetics, Dr. Woltering's recipe for 95
Glycerine enemata and suppositories in constipation, Dr. Griffith on ... 81, 214
——— injections in diarrhœa and prolapse of children, Mr. Rice on ... 217
——— suppositories, Dietrich's method of preparation of 81
Goitre, Mr. Duncan on results of electrolysis in treatment of 11
Gonorrhœal salpingitis, Dr. White on the etiology of 127
Goodhart, Dr.. on subcutaneous injection of strychnine in paralysis ... 34
Gout, Dr. Le Clerq on the influence of Carlsbad water on 141
Gowers, Dr. W. R., on syphilitic disease of the arteries of the brain ... 157
——— on prognosis of syphilitic affections of nervous system ... 163
——— on treatment of syphilitic affections of nervous system ... 167

Graves' disease, Dr. Brower on its treatment by strophanthus 11
Gresswell, Dr, D. A., on the use of oxygen in scarlet fever 21
Griffith, Dr. C., on glycerine enemata and suppositories in constipation ... 214
———— on the etiology and symptoms of Friedreich's ataxia ... 175
Gross, Dr. S. W., on the removal of carcinoma of the breast 405

Hardie, Mr. J., his case of hernia of the sub-peritoneal fat 330
Harrison, Dr. A. T., on ringworm, and on a parasiticide application for... 122
Harrison, Mr. R., on the treatment of tight urethral strictures 342
Hart, Dr. D. B., on adherent placenta and its treatment 384
———— on management of the third stage of labour 383
Hay-fever, Dr. McBride on its allied conditions and treatment 210
———— Dr. Wood on nasal bougies for use in 64
Headache, catarrhal, due to inflammation of frontal sinus, Dr. Seiss on ... 55
Headaches, ocular, Mr. Walter Jessop on 368
Heart, Dr. Da Costa on the treatment of valvular diseases of the ... 189
Heart disease, Dr. Da Costa on the state of the urine in 49
———— Dr. Da Costa on the therapeutic treatment of 47
———— Dr. Da Costa on chloride of barium in 48
———— Dr. Oliver on adonidine in the treatment of 193
———— Dr. Oliver on gastro-enteritis as a cause of death in ... 49
Heath, Mr. C., on retention of urine in old persons 335
Helleborine, MM. Vittovio and Elvidio on local anæsthetic action of ... 12
Hemorrhage in salicylism in acute rheumatism, Dr. Shaw on 147
———— spurious, from the throat, Dr. Percy Kidd on 204
Hemorrhoids, Dr. Matthews on their treatment by ligature 328
————Mr. Edwards on their treatment by injection 325
————prolapse, &c., Dr. White on treatment by cold douche ... 82
Hernia into the foramen of Winslow, Mr. Treves on 83
——of the subperitoneal fat, Mr. Hardie's case of 330
Hewetson, Mr. H. B., on septic danger from nasal and aural discharges ... 372
Hip disease, Dr. Judson on aids to early diagnosis of 108
Hip-joint, Mr. Barker on complete removal of tubercular disease from ... 252
————tubercular, Mr. Pollard on primary union after excision of ... 108
Hip-splint, Dr. Judson on the American 256
Howard, Dr. B., new way of raising the epiglottis to prevent asphyxia ... 61
Hutchinson, Mr., persisting aptyalism 36 ; scrotal tumor 95 ; crateriform ulcer 114
Hutchinson, Mr. J., jun., on syphilitic disease of the knee-joint 109
Hunter, Dr. W., on the nature of pernicious anæmia 17, 145
Hydatid of liver, Mr. H. Morris on its surgical treatment 84
Hyde, Dr. J. N., on dermatitis tuberosa due to iodine compounds ... 361
Hydrofluoric acid in phthisis, M. Hérard on the inhalation of 67
Hydronephrosis, intermittent, Dr. Landau on 98
Hydroxylamin, Dr. Eichoff on its employment in skin diseases... ... 117
Hyperpyrexia, Dr. Dreschfeld on the effect of pyrodine in 136
Hypertrophy of the prostate, Dr. Webb on operations in 337
Hypnotic, Kast and Rabbas on sulphonal as a 37
Hypodermic morphia, Dr. Daly on dose and best preparation to inject ... 14, 15
———— syringes, how to keep them clean 12
Hysterical motor affections of the vocal cords, Dr. Ball on 182
Hysterorrhaphy, Dr. Lee on the value of 127

Icterus neonatorum, Dr. Underhill on, and its relation to sepsis ... 85
Impetigo simplex, typical, Dr. Duhring on cases of 359
Infection in scarlet fever, Dr. Whitelegge on the period of 149
Inflammation, peri-cæcal, Dr. Preston on 231
Inguinal colotomy for malignant disease of the rectum, Mr. Cripps on ... 311
Injection, Mr. Edwards on the treatment of piles by 325
Intermittent albuminuria, Dr. C. H. Ralfe on 234
———— albuminuria, Dr. George Johnson on 96
———— hydronephrosis, Dr. Landau on 98
Intra-uterine death, Prof. Simpson on the preventive treatment of ... 375
Iodine compounds, Dr. Hyde on dermatitis tuberosa due to 361
——— eruptions, a pure and simple dermatitis, Dr. Taylor on 118
Iron preparations in the diseases of children, Dr. Gillet on 13
Itch, Dr. Kaposi on its treatment with naphthol 118

Jacobi, Dr. A., on the employment of mercury in diphtheria 57
Jaundice, persistent, Dr. Goodhart on subcutaneous injection of pilocarpin 86
Jessop, Mr. W. H., on ocular headaches 368
Johnson, Dr. G., on intermittent and latent albuminuria 96
Judson, Dr. A. B., on the American hip splint 256
Juniper juice, Dr. Goldschmid on as a diuretic for children 95
Keferstein, Dr., formulæ for the administration of creasote 9
Kelsey, Dr. C. B., on fistula-in-ano and its operative treatment 320, 323
Kidd, Dr. Percy, on spurious hemorrhage from the throat 204
Kidney, moveable, Dr. Niehans on a truss for 99
Kirkham, Mr., removal of calculus from ureter in suppression of urine ... 341
Knee, Mr. G. A. Wright, on erasion or arthrectomy of the 265
Knee-joint, Mr. Hutchinson, jun., on syphilitic disease of the 109

Labour, Dr. Berry Hart on management of the third stage of 383
Lactic acid and curetting in tubercular laryngitis, Dr. Keimer on ... 69
Lanolin and boric acid in skin diseases of children, Dr. Sturgis on ... 118
Laryngitis, tubercular, Dr. Keimer on curetting and lactic acid in ... 69
——— tubercular, Rosenberg on its local treatment by menthol ... 69
Lead and alcohol, Mr. Porritt on the pathological affinities of 153
Leech, Dr. D. J., on nitrite of ethyl and its therapeutic uses 138
Leukoplakia buccalis and its treatment, Dr. Unna on 118
Lichen ruber, Dr. R. W. Taylor's description of 355
Life assurance. Dr. Tyson on the relation of albuminuria to 131
Ligature, Dr. Matthews on the treatment of piles by 328
Liver, Dr. Millard's successful treatment of cases of cirrhosis of ... 75
——— Dr. Payne's description of acute red atrophy of the 69
——— and alimentary canal, Sir A. Garrod on sulphur in diseases of ... 73
——— and kidney disease, Dr. Dickinson, chronic alcoholism as a cause ... 6
——— hydatid, Mr. H. Morris on its surgical treatment... 84
Lloyd, Mr. Jordan, on dry antiseptic wound treatmeut 281
Loomis, Dr. A. L., on cardiac changes in chronic Bright's disease ... 195
Lung abscess and empyema, Mr. Marsh on the surgical treatment of ... 296
——— abscess and empyema, Mr. Teale on the surgical treatment of ... 300
——— diseases, Ye Gempt on salicylate of soda and caffeine in 59
Lupus, Dr. Unna on the treatment of 119

Malignant disease, Dr. Finlayson on pyrexia, shiverings and pyæmia in ... 15
Mammary cancer, Prof. Gross on the removal of 405
Mapother, Dr. E. D., on an anomalous form of eczema 354
Marsh, Mr. H., on the surgical treatment of empyema 296
Marshall, Dr. L. W., on the treatment of nævi by electrolysis 287
Matthews, Dr. J. M., on the treatment of piles by ligature 328
McBride, Dr. P., on hay-fever, its allied conditions and treatment ... 210
Meigs, Dr. A. V., on the treatment of peritonitis 219
Mental disorders, Cramer and Rabbas on sulphonal in the insomnia of ... 39
Menthol, Dr. Saalfeld on its employment in pruritic affections 121
——— Herr Cholewa on the treatment of diphtheria by 59
——— Herr Rosenberg on the treatment of tubercular laryngitis by ... 69
Mercury in diphtheria, Dr. Jacobi on the employment of 57
Metatarsalgia, anterior, Dr. Pollosson on the treatment of 104
Methyl-chloride spray in neuralgia, Dr. Debove's portable cylinder for ... 33
Milk, Herr Raudnitz on sterilization of at the time of milking 15
—— jelly as a variation in milk diet, Prof. Liebreich on 86
Morgan, Dr. J. E., on erythro-melalgia 178
Morphia, hypodermic, Dr. Daly on the best preparation to inject ... 14
——— hypodermic, Dr. Daly on the initial dose for... 15
Morpheine, codeine, opium, Dr. Fraser on relative value in diabetes ... 239
Myrtol as a disinfectant for the air-passages, Prof. Eichhorst on ... 16

Nævi, Dr. Marshall on their treatment by electrolysis 287
—— and angiomatous tumours, Dr. Duncan on electrolysis in 289
Naphthol, Dr. Kaposi on the treatment of itch with 118
——— Dr. Ruault on the treatment of ozæna by 65
Narcotic poisoning, Dr. Gibson on strychnine as an antidote in 187

Nasal and aural discharges, Mr. Hewetson on septic dangers from ... 372
——— bougies for use in hay fever, Dr. Wood on 64
——— mucous membrane, Dr. Seiss on chromic acid for hypertrophy of ... 119
——— polypi, Dr. Cresswell Baber on their removal by the nasal snare ... 65
——— stenosis, Dr. Cresswell Baber on the effects of 306
Naso-pharyngeal tumours, Mr. Annandale on the removal of 304
Nerve-grafting, Mr. Mayo Robson's successful case of 32
Nerves, peripheral, Dr. Payne on changes induced by alcohol in ... 171
Nervous system, Dr. Gowers on the prognosis of syphilitic affections of ... 163
——————— Dr. Gowers on the treatment of syphilitic affections of ... 167
Neuralgia, Dr. Debove's application of chloride of methyl spray in ... 33
Neuritis, peripheral, Dr. Gowers on syphilis as a cause of 36
——— peripheral, Joffroy and Achard on conditions associated with ... 35
Nitrite of ethyl and its therapeutic uses, Dr. Leech on 16, 138
Nose and throat diseases, creolin as an antiseptic in 10

Ocular headaches, Mr. Walter Jessop on 368
Œsophagus, Dr. Symonds on tubage in malignant stricture of 413
——————— malignant stricture of, Dr. Symonds on its treatment ... 417
Ogston, Dr., compound fracture and dislocation 261 ; club-foot 266 ; flat foot 279
Oily mixtures, a useful menstruum for 17
Oliver, Dr. T., on adonidine in the treatment of heart disease 193
Ophthalmic surgery, Dr. Theobald on the influence of cocaine upon ... 370
Opium, morpheine, codeine, Dr. Fraser on their value in diabetes ... 239
Osler, Dr. W., on the treatment of puerperal anæmia by arsenic ... 129
Otitis, suppurative, Sir D. Duckworth on the remote effects of 365
Ovarian tumours, Mr. Knowsley Thornton on rotation of 398
Oxygen in scarlet fever, Dr. Gresswell on the use of 21
Oxyuris vermicularis, Ed. Medical News on a mixture for 87
Ozæna, Dr. Ruault on its treatment by naphthol 65

Palate-retractor, Dr. Baber on a self-retaining, for rhinoscopy 308
Pancreas, Dr. Suckling on the diagnosis of carcinoma of 72
——————— Dr. Walker, significance of clay-coloured stools in disease of ... 87
Papayotin, Dr. Schwimmer on its use in fissures of tongue 117
Paraldehyde, Dr. La Moure on its use in obstinate vomiting 87
Paralysis, Dr. Goodhart on subcutaneous injection of strychnine in ... 34
——— alcoholic, Dr. Buzzard on amenorrhœa in 27
——————— after typhoid fever, Dr. Ross on some forms of 150
Parker, Mr. R. W., diphtheria 56, 293 ; operation for club-foot 271
Pastes for eczema, Lassar's, Unna's, and Gruendler's 119
Paton, Dr. D. Noel, on systematic examination of urine for albumins ... 237
Payne, Dr. J. F., acute red atrophy of liver 69 ; alcoholic ataxia ... 171
Pearse, Dr. F., on alkalies in the treatment of eczema 351
Pediculi pubis, application of ether sprey in 120
Pelvic tumours, Mr. Lawson Tait on diagnosing the position of ... 128
Pemphigus pruriginosus, Secretan's case cured by carbolized water ... 120
——————— vegetans, Dr. Radcliffe Crocker's case of 120
Perforating typhoid ulcer, Dr. Mears on the surgical treatment of ... 23
Peri-cæcal inflammation, Dr. Preston on 231
Pericarditis, Herr Puis on the diagnosis of 51
——————— purulent, Dr. Dickinson on aspiration and drainage in ... 51
Perineal section, Mr. Sheild on suture of the urethra in cases of ... 347
Peripheral neuritis, Dr. Gowers on syphilis as a cause of 36
——————— neuritis, Joffroy and Achard on conditions associated with ... 35
Peritonitis, Dr. Baldy on the treatment of 88
——————— Dr. Meigs on the treatment of 219
——————— acute tubercular, in the adult, Dr. Fenwick on 89, 222
Pernicious anæmia, Dr. Hunter on the nature of 145
Phenacetin as an analgesic, Dr. Dujardin Beaumetz on 19
——————— as an antipyretic, Dr. Müller on 18
Phillips, Dr. J., on pilocarpin in pregnancy, &c. 128 ; fixation of uterus ... 386
Phthisis, Dr. Dochmann on its treatment by calomel 67
——————— M. Hérard on inhalation of hydrofluoric acid in 67
——————— pulmonary, Dr. Austin Flint on creasote inhalation in 66
——————— pulmonalis, Dr. Robinson on creasote as a remedy in 207

Piles, Dr. Matthews on their treatment by ligature 328
——— Mr. Edwards on their treatment by injection 325
Pilocarpin, Dr. Goodhart on its subcutaneous injection in jaundice ... 86
———— Mr. Field on the treatment of labyrinthine deafness by ... 124
———— in pregnancy, labour, and the lying-in state, Dr. Phillips on ... 128
———— in puerperal convulsions, Dr. Phillips on 128
Placenta, adherent, and its treatment, Dr. Berry Hart on 384
Pleuritic effusion, recent, treated by saline cathartics, Dr. Smith on ... 202
Pneumothorax, recurrent, Dr. Samuel West on a case of 200
Poisoning, cocaine, Dr. Moizard on a case of 7
———— narcotic, Dr. Gibson on strychnine as an antidote in 187
"Poop," Mr. Wherry on the football accident so-called 260
Pollosson, Dr. A., on the treatment of anterior metatarsalgia 104
Polypi, nasal, Dr. Bader on removal of by the snare 65
Porritt, Mr. N., on the pathological affinities of lead and alcohol ... 153
Pregnancy, labour and lying-in state, Dr. Phillips on pilocarpin in ... 128
———— vomiting of, Hennig, Sänger, and Günther on 130
Preston, Dr. G. J., on peri-cæcal inflammation 231
Prolapse, Mr. Phillips on ventral fixation of uterus for intractable ... 386
——— and diarrhœa of children, Mr. Rice on glycerine injections in ... 217
Prostatic hypertrophy, Dr. Webb on operative procedures in 337
Pruritic affections, Dr. Saalfeld's employment of menthol in 121
Pruritus, an application for 121
Psoriasis, Dr. Jamieson on the treatment of 121
Puerperal anæmia, Dr. Osler on its treatment by arsenic 129
———— convulsions, Dr. Phillips on pilocarpin in 128
———— fever a preventable disease, Dr. Cullingworth on 390
Pyrodine, a new antipyretic, Dr. Dreschfeld's clinical observations on ... 134

Ralfe, Mr. C. H., on intermittent albuminuria 234
Rashes, accidental, in typhoid fever, Dr. Moore on diagnostic value of ... 24
Rectal carcinoma, Mr. Chavasse on sigmoid colotomy in 315
Rectum, Mr. Cripps on inguinal colotomy for malignant disease of the ... 311
——— "ballooning" of, Mr. Bryant on in stricture of bowel 319
Recurrent pneumothorax, Dr. West on 200
Retention of urine, Mr. Kirkham's removal of a calculus in a case of ... 341
———— of urine in old persons, Mr. Christopher Heath on 335
Rheumatism, acute, Dr. Cash on antipyrin in 1
———— acute, Dr. Shaw on hemorrhage in salicylism during ... 147
———— acute, Herr Lindmann on subcutaneous nodules in ... 2
Rhinoscopy, posterior, Dr. Baber on a self-retaining palate-retractor for ... 308
Rice, Mr. G., on glycerine injections in diarrhœa and prolapse of children 217
Rickets, Dr. Cheadle on the general treatment of 110
Ringworm, Dr. Harrison, parasiticide and prophylactic applications ... 122
———— of the scalp, Dr. Thin on the treatment of... 121
Robinson, Dr. B., creasote in phthisis 207 : diet in chronic Bright's disease 243
Ross, Dr. G., on some forms of paralysis after typhoid fever 150

Salicylate of bismuth in digestive disorders of children, Dr. Ehring on ... 79
———— of soda, Drs. Gibson and Felkin on an unusual effect of ... 20
———— of soda and caffeine in lung diseases, Ye Gempt on 59
Salicylism, Dr. Shaw on hemorrhage in during acute rheumatism ... 147
Saline cathartics in recent pleuritic effusion, Dr. Smith on 202
——— solution, normal, Mr. Brown's case of transfusion of the 401
Salol, Dr. Saalfeld on its use in the treatment of skin affections ... 122
Salpingitis, gonorrhœal, Dr. White on the etiology of 127
Seborrhœa sicca of the scalp, Dr. Vidal's ointment for 122
Scarlet fever, Dr. Gresswell on the use of oxygen in 21
———— Dr. Whitelegge on the period of infection in 149
Scrofula, struma, and tuberculosis in relation to skin diseases, Leloir ... 123
Scrotum, Mr. Hutchinson on fatty tumour of the 95
Septic dangers from nasal and aural discharges, Mr. Hewetson on ... 372
Shaw, Dr. L. E., on hemorrhage in salicylism in acute rheumatism ... 147
Sheild, Mr. M., opium in ulcerated mouth, 91 ; suture of urethra ... 347
Shoulder, dislocations of, Dr. Powers on Kocher's method in 107

Simpson, Prof., on the preventive treatment of intra-uterine death ... 375
Skull, fracture of base, Dr. Bennett on hemorrhage from ear in... ... 108
Smith, Dr. P. B., on treatment of recent pleuritic effusion by saline cathartics 202
Spine, cervical, Mr. Barwell's inexpensive head-support in caries of the... 247
Spurious hemorrhage from the throat, Dr. Percy Kidd on 204
Stenosis, cervical, Dr. Duke's new spiral wire stem for 411
——— nasal, Dr. Cresswell Baber on the effects of 306
Sterility and obstructive dysmenorrhœa, Dr. Halliday Croom on ... 377
Sterilized hot water, Mr. Barker on its use in surgical operations ... 111
Stokes, Sir W., on traumatic sub-dural abscess of the brain 284
Stomach, dilatation of, Dr. Baraduc on internal electrical treatment of ... 80
——— dilatation of, Herr Ott on its treatment 79
Stricture, intestinal, Mr. Bryant on "ballooning" of rectum in 319
——— urethral, Dr. Keyes on non-efficacy of electricity in 102
——— urethral, Mr. Harrison on the treatment of tight 342
Strophanthus, Dr. Brower on the treatment of Graves's disease by ... 11
——— M. Lemoine on the diuretic action of 22
Struma, scrofula and tuberculosis in relation to skin diseases, Leloir on ... 123
Strychnine as an antidote in narcotic poisoning. Dr. Gibson on 187
——— in paralysis, Dr. Goodhart on the subcutaneous injection of ... 34
Sugar in the urine, Ed. Dietetic Gazette on the detection of 101
Sulphonal, Dr. Bornemann on a case of poisoning by 39
——— Herr Kast on its administration 38
——— Kast and Rabbas on the composition and effects of 37
——— in the insomnia of mental disorders, Cramer and Rabbas on ... 39
Sulphur, Sir A. Garrod on therapeutic use of long-continued small doses ... 22
——— in diseases of alimentary canal and liver, Sir A. Garrod on ... 73
Suppositories, glycerine, Dietrich's method of preparing 81
Suppurative otitis, Sir D. Duckworth on the remote effects of 365
Supra-pubic cystotomy, Dr. Gerster on the transverse incision in ... 102
Sweating, excessive, the use of chromic acid in 116
Sycosis, Dr. Unna on the treatment of 123
Symonds, Dr. C. J., on tubage in malignant œsophageal stricture 413, 417
Syphilitic affections of nervous system, Dr. Gowers on prognosis of ... 40, 163
——— affections of nervous system, Dr. Gowers on treatment of ... 167
——— disease of knee-joint, Mr. Hutchinson, jun., on 109
——— disease of the arteries of the brain, Dr. Gowers on 157
——— history in cases of tabes dorsalis, Dr. Gowers on 41
——— taint, Dr. Gowers on Argyll-Robertson pupil as an evidence of ... 27

Tabes dorsalis, Dr. Gowers on syphilitic history in cases of 41
——— Dr. Watteville's case treated by suspension 43
——— M. Charcot on its treatment by suspension 42
Tait, Mr. Lawson, on amputation of pregnant uterus, 124 ; on pelvic tumour 128
Talipes, Dr. Ogston on the treatment of 266
——— Mr. R. W. Parker on the operative treatment of 271
——— equino-varus, Dr. Fairbank on partial excision of tarsus for ... 277
——— varus, Dr. Buchanan on the treatment of 275
Tarsotomy and tarsectomy in club-foot, Mr. R. W. Parker on 273
Taylor, Dr. R. W., description of lichen ruber, 355 ; on iodine eruptions... 118
Teale, Mr. T. P., on the surgical treatment of lung abscess and empyema 300
Theobald, Dr. S., on the influence of cocaine upon ophthalmic surgery ... 370
Throat and nose, creolin in diseases of the 10
Thin, Dr. G., on grouped comedones, 117 ; on ringworm of the scalp ... 121
Thornton, Mr. J. K., on rotation of ovarian tumours 127, 398
Throat, Dr. Percy Kidd on spurious hemorrhage from the 204
Toe-nail, ingrowing, Dr. Clemens on its treatment by tinfoil 13
——— ingrowing, Herr Hofmann on the treatment of 12
Tongue and mouth, ulcerated, Mr. Sheild on use of opium in 91
——— fissures of, Dr. Schwimmer on use of papayotin in 117
Tonsils, enlarged, Dr. Gleitsmann on use of galvano-cautery for ... 60
——— enlarged, Dr. Roth on treatment by ignipuncture 60
Tonsillitis, acute, Dr. Lewis on its relation to acute rheumatism ... 52
——— acute, Dr. Lewis on its treatment by incision 53
Tracheotomy in diphtheria, Mr. Parker on the method of operating for ... 293

Transfusion of the normal saline solution, Mr. Brown's case of 401
Trendelenburg's posture in gynæcological examinations, Dr. de Leon ... 129
Tubage in malignant stricture of œsophagus, Dr. Charters Symonds on ... 413
Tubercular disease of hip-joint, Mr. Barker on its complete removal ... 252
——— laryngitis, Dr. Keimer on curetting and lactic acid in ... 69
——— laryngitis, Rosenberg on its local treatment by menthol ... 69
——— peritonitis, Dr. Fenwick on the condition of the lungs in ... 89
——— peritonitis, acute, in the adult, Dr. Fenwick on 222
Tuberculosis, struma, and scrofula in relation to skin diseases, Leloir ... 123
Tumours, angiomatous, Dr. Duncan on electrolysis in nævus and ... 289
——— naso-pharyngeal, Mr. Annandale on the removal of 304
——— ovarian, Mr. Thornton on rotation of 398
Turpentine, oil of, as a styptic in epistaxis, Dr. Ernyei on 47
Tympanum, hyperæmia of, Dr. Morpurgo on carbolic acid glycerine in ... 124
Typhoid fever, Dr. Dreschfeld on the effect of pyrodine in 135
——— Dr Leidy on the employment of digitalis in 25
——— Dr. Mears on surgical treatment of perforation in ... 23
——— Dr. Moore on diagnostic value of accidental rashes in ... 24
——— Dr. Ord on diet in the convalescence of 26
——— Dr. Ross on some forms of paralysis after 150
——— in infancy, Dr. Keating on 26
Typhlitis, Sir Dyce Duckworth on its nature and treatment 226
Typhus fever, Dr. Dreschfeld on the effect of pyrodine in 134
Tyson, Dr. J., on the relation of albuminuria to life assurance 131

Ulceration of tongue and mouth cured by opium, Mr. Sheild on 91
Ulcer of the face, crateriform, Mr. Hutchinson's description of 114
Ulcers, Mr. Nason on cocaine in the treatment of 123
Urethra, Mr. Sheild on suture of, in cases of perineal section 347
Urethral stricture, Dr. Keyes on its curability by electricity 102
——— Mr. Harrison on the treatment of tight 342
Urinary retention in old persons, Mr. Christopher Heath on 335
——— suppression, removal of impacted calculus, Mr. Kirkham on ... 341
Urine, Dr. Paton on its systematic examination for albumins 237
——— Herr Zāhor on quantitative estimation of albumen in 93
——— Ed. of Dietetic Gazette on detection of sugar in 101
——— in heart disease, Dr. Da Costa on the state of the 49
Uterus, pregnant, Dr. Atthill on the action of certain drugs on 381
———pregnant, Mr. Lawson Tait on amputation of the 124
———extirpation of, for malignant disease, Sir Spencer Wells on 126, 395
———ventral fixation of, for intractable prolapse, Dr. Phillips on ... 386
Valvular diseases of the heart, Dr. Da Costa on 189
Varicocele, Mr. Bennett on a new method for the radical cure of ... 348
——— Mr. Bennett on the treatment of ordinary cases of 102
Vermicularis oxyuris, Ed. Medical News on a mixture for 87
Vesico-uterine fistula, Dr. Champneys on a new operation for 393
Vocal cords, Dr. Ball on hysterical motor affections of the 182
Vomiting, obstinate, Dr. La Moure on the use of paraldehyde in... ... 87
——— of pregnancy, Hennig, Sänger and Günther on treatment of ... 130
Vulvo-vaginitis in children, Dr. Pott on the causation of 103

Warts, corns, callosities, &c., Dr. Roesen on the treatment of 114
Webb, Dr. R. D., on operative procedures in hypertrophy of prostate ... 337
Wells, Sir T. Spencer, on extirpation of uterus for malignant disease ..126, 395
West, Dr. S., on acetonuria, 92 ; case of recurrent pneumothorax ... 200
Whalebone bougies for tight strictures, Mr. Reginald Harrison on ... 103
Wherry, Mr. G., on the football accident called the "Poop" 260
White, Dr. J. W., gonorrhœal salpingitis, 127 ; on the cold douche ... 333
Whitelegge, Dr. A., on the period of infection in scarlet fever 149
Whooping cough, Dr. Mohn on its abortive treatment by fumigation ... 69
Wound treatment, dry antiseptic, Mr. Jordan Lloyd on 281
Wright, Mr. G. A., on erasion or arthrectomy of the knee 265

PRINTED FOR D. I. ROEBUCK BY GOODALL AND SUDDICK, LEEDS.

PUMILINE.

For Throat and Chest Affections, Rheumatism, and Gout.

THE SNOW-GROWN PINUS PUMILIO.

The pure Essence and Extract of Pumilio Pine is manufactured ONLY by G. & G. STERN.

STERN'S PUMILINE is the pure Essence and Extract **EXCLUSIVELY OBTAINED** from Pumilio Pines growing nearest the Snow-line on the Alps, and has proved of great benefit to sufferers from **Gout, Rheumatism, Sore Throat, Bronchial and Chest Affections, and Skin Disease.**

The treatment by **Stern's Pumiline** has been widely adopted by medical men in the United Kingdom, and in offering this valuable preparation to the further notice of the Profession we do so with full confidence that it will meet with their approval and give the satisfactory results claimed for it.

Over seven hundred letters have been received during the last six months from prominent medical men in the United Kingdom reporting the complete success they had in all cases in which **Stern's Pumiline** was used.

Sir MORELL MACKENZIE writes:—"I consider it a most valuable preparation."

J. GERARD, Esq., M.D., M.R.C.P., London, writes:—"The preparations have commended themselves to me."

B. H. MUMBY, Esq., M.D., Medical Officer of Health, Portsmouth, writes:—"I am very highly pleased with the Pumiline."

The *Lancet* of March 10th, in an article by Dr. PROSSER JAMES, says:—"**A very pure** Oleum Pini Pumilionis is now imported under the name **Pumiline.** This essential oil possesses in a high degree the odour of the most fragrant variety of the Pine, and moreover is less irritating than any other. Sprinkled or sprayed about a sick room it imparts a lasting and grateful fragrance to the air, which is not oppressive and seems to be disinfectant. It can also be taken **internally,** and is admirably adapted for inhalation."

LITTON FORBES, Esq., M.D., F.R.C.S., Senior Surgeon of the Eye and Ear Hospital, Wells Street, writes:—"It is superior to others with which I am acquainted."

J. DYSART MCCAW, Esq., F.R.C.S., Belfast, writes:—"I have prescribed it with the most satisfactory results, and can recommend it."

H. ROBINSON, Esq., M.K.Q.C.P., Fellow and Examiner of Royal College of Surgeons in Ireland, Lecturer Ledwick School of Medicine, &c., writes:—"I have used Stern's Pumiline with satisfactory results, and can recommend it."

The *Journal of Laryngology* (edited by Sir MORELL MACKENZIE and Dr. NORRIS WOLFENDEN) of March, 1888, says:—"After practical examination, **Stern's Pumiline** proves to be the **best** Pine Oil obtainable for treatment. We accord Stern's preparations the **first** place in the market."

Articles and Letters which have appeared in *The British Medical Journal, The Medical Press and Circular, The Hospital Gazette, The Medical Recorder, The Medical Annual, Hygiene,* and a number of other Medical Journals, testify to the unique excellence of STERN'S PUMILINE.

To avoid inferior articles Medical Men are earnestly requested to always write

"STERN'S PUMILINE ESSENCE OR EXTRACT,"

On their Prescriptions.

Copies of Analytical Reports, Testimonials, Pamphlet, &c., and SAMPLES of Pumiline Essence, Extract, Jujubes, Soap, and a Pneumatic Spray for Deodorising, &c., sent FREE to Medical Men on application to

G. & G. STERN,

62, GRAYS INN ROAD, HOLBORN, LONDON, W.C.

(Late of 11, BILLITER SQUARE.)

SPECIALITIES IN SURGICAL TISSUES.

ABSORBENT COTTON LINTS, ROLL BANDAGES, FLAX LINTS, COTTON WOOLS.

TRADE MARK

PATENT ABSORBENT GAUZE AND COTTON TISSUE, SOLD AS "GAMGEE TISSUE."

MANUFACTURED BY

ROBINSON AND SONS,

Cotton Spinners, Weavers, and Bleachers,

WHEAT BRIDGE MILLS, CHESTERFIELD,

And 55, Fann Street, Aldersgate Street, London, E.C.

LINT.

These we make by our improved machinery, perfectly pure, strongly absorbent, beautifully soft, tears well, and very cheap. Their use in the largest Hospitals of London, Edinburgh. &c., is a sufficient guarantee of their quality. Our Flax Lint is the only ABSORBENT Flax Lint made, that we know of.

BANDAGES.

Surgeons who have not seen our New White Absorbent Roll Bandages should write us for a sample. As well as being all that is required for splints, &c., being instantaneously absorbent, LOTIONS can be applied direct through the bandage, and they are also the very best Bandage for use with starch, or plaster of Paris, &c. We were the first to introduce these favourite bandages to the profession.

ABSORBENT COTTON WOOLS.

We were the Sole Manufacturers of Absorbent Cotton Wool for the late Sampson Gamgee, Esq., F.R.S.E., who introduced it into British practice, and have had a large and increasing demand for this article up to present date. We make a first-class article for Surgeons' private practice, and a pure cheap Absorbent Cotton for Hospital use. We are also Carders of both Grey and the ordinary grades of Non-Absorbent White Cottons.

"GAMGEE TISSUE"

This patented article, recently introduced, and of which we are the sole proprietors and manufacturers, is deservedly increasing in favour with the profession. We quote the following extract from a Clinical Address delivered by SAMPSON GAMGEE, Esq., F.R.S.E., Consulting Surgeon to the Queen's Hospital, Birmingham :—

"On purely surgical grounds, I have no hesitation in stating that the absorbent gauze and cotton tissue prepared at my suggestion by Messrs. Robinson and Sons, of Chesterfield, is one of the most generally useful and comfortable, the most easily manageable and most economical surgical dressing with which I am acquainted.

"The Tissue as made in long lengths, is perfectly uniform in surface and thickness, and can be cut to any shape or size to pad the trunk or the limbs, in case of disease or injury. Powerfully absorbent and elastic, the tissue is equally serviceable for drainage and compression, for dressing blisters and burns, wounds and ulcers, sprains and fractures. The tissue does not stick in wounds, and can be applied and taken off with facility and without pain. It does not lump together, but remains uniform, and is a most soothing and healing application to inflamed joints, and many skin affections.

PLEASE READ THIS.

"The tissue is susceptible of any antiseptic medication, and it also takes up plaster of Paris, cream, liquid glass, collodion, or paraffin so readily as to make an excellent basis for splintage and moulds. A limb or the trunk may be very speedily and effectually immobolized by surrounding it with a layer of the dry tissue, and outside that placing a layer, or intersecting slips, of the same material previously soaked in plaster of Paris, cream, or other solidifiable substance, which is best kept in its desired position by Robinson and Sons' Absorbent Bandages."

N.B.—Certificate of Merit to Robinson and Sons, for Bandages, Cotton Wools, and Lints, exhibited at the International Medical and Sanitary Exhibition, London, 1881. We place the highest value on this AWARD, as most of the Judges of Surgical Appliances at the late Exhibition have used our Lints, &c., for many years at the London Hospitals. No higher recognition of quality can be given.—Robinson & Sons

Our Goods can be had from the Wholesale Houses or direct from the Mills.

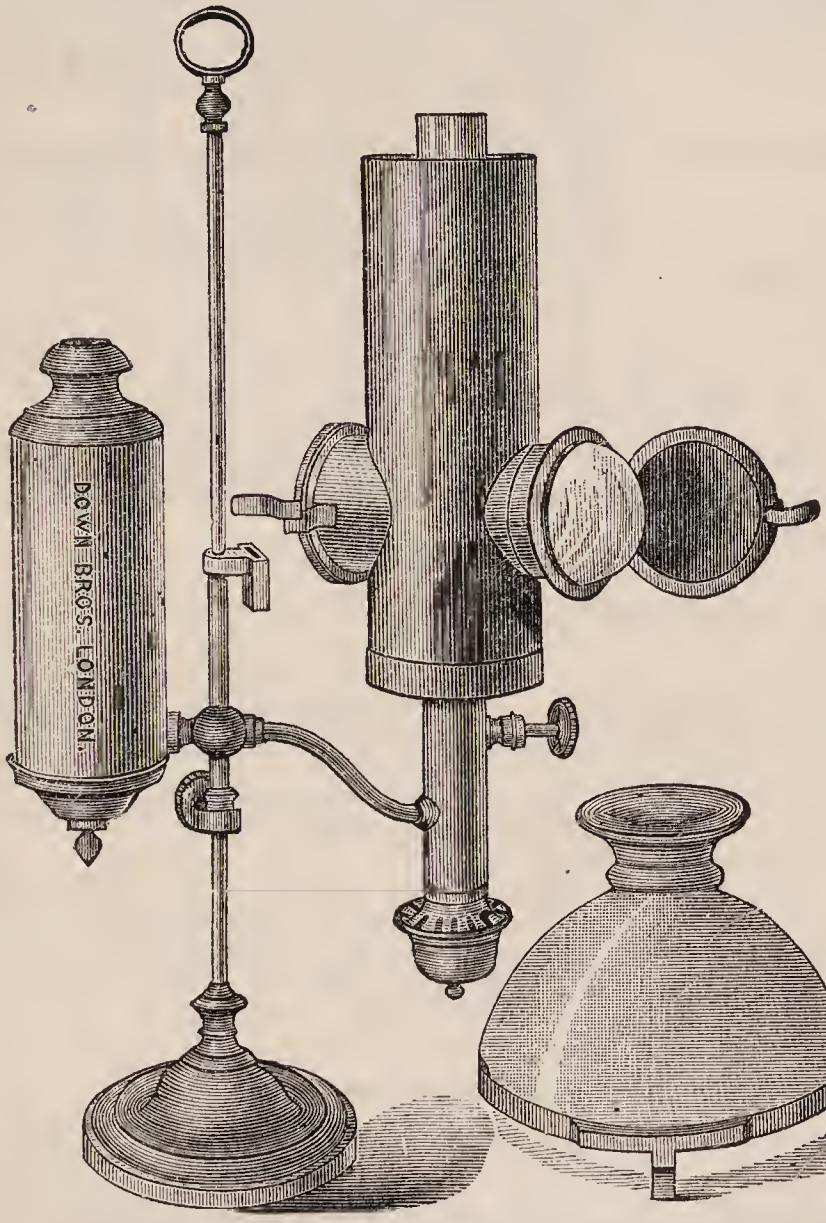
IMPROVED LAMP

FOR

LARYNGOSCOPIC & OPHTHALMIC EXAMINATIONS, &c.

Suggested by G. A. CARPENTER, M.B., London.

PRICE COMPLETE, £2 18s. 6d. DARK BRONZED,



OR £3 10s. 6d. NICKEL-PLATED.

This Lamp gives a light equal to 25 candles when arranged as shown in the illustration for Laryngoscopic purposes.

By closing the cover over bull's eye and opening the shutter at back, a light equal to 10 candles for Ophthalmic examinations.

It can also be used as an ordinary Reading Lamp by removing metal chimney and adapting the glass shade.

DOWN BROS.,

SURGICAL INSTRUMENT MANUFACTURERS,

31& 4, ST. THOMAS'S STREET, LONDON, S.E.

(OPPOSITE GUY'S HOSPITAL).

THE INSTITUTE OF MEDICAL ELECTRICITY

(LIMITED),

24a, REGENT STREET, WATERLOO PLACE,

LONDON, S.W.

(Entrance in JERMYN STREET), Close to Piccadilly Circus, and near to Charing Cross. Omnibuses from all parts of London pass the door every minute.

Telegraphic Address—"VIGOUR, LONDON."

UNDER STRICT MEDICAL SUPERVISION.

Chairman - - - WM. LANT CARPENTER, Esq., B.A., B.Sc., M.I.E.E.
Physician - - ARTHUR HARRIES, Esq., M.D.

NO PATIENT IS ELECTRICALLY TREATED WITHOUT THE SANCTION OF A QUALIFIED MEDICAL PRACTITIONER.

The premises are fitted up with all kinds of Electro-Medical Apparatus of the Newest and Best Description. Medical men are invited to visit the Institute at any time.

Electrical Treatment of every known kind.

Electric Baths.

Electrified Room System, by which patients are unconsciously influenced by electrical currents of high potential.

Electro-Manipulation, by which the advantages of electricity (at high potential) and massage are combined.

Electro-Gymnastic System, by which electric currents varying in character and strength, according to the requirements of the case, are passed through the body or parts thereof, at the same time that mechanical exercise is induced.

Massage, or Medical Rubbing.

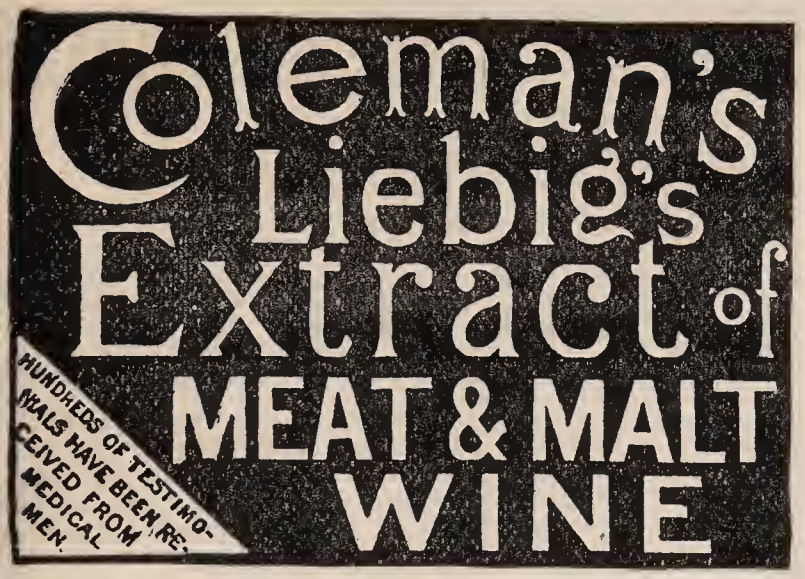
Medical Men can, by arrangement, have the use of the fixed Apparatus for the purpose of Diagnosis, or of treating their own patients at the Institute.

Medical Batteries and other Portable Apparatus let out in working order.

For further information, Address:

H. NEWMAN LAWRENCE, A.I.E.E.,
MANAGING DIRECTOR.

Branch:—29, LANDPORT TERRACE, SOUTHSEA, HANTS.



Is a Delicious Beverage and Tonic made from Port Wine, Liebig's Extract of Meat, and Extract of Malt; Strengthening, Flesh-forming and Health-restoring; suitable for the Robust in Health as well as the Invalid.

Strongly recommended by the Medical Faculty

IMPORTANT UNSOLICITED TESTIMONIAL

FROM

E. HOPKINS, ESQ., L.R.C.P., L.F.P.S.

OVER ONE THOUSAND have been received from Medical Men

54, Aston Road, N., Birmingham, *December 17th*, 1886.

Dear Sirs,—I beg to acknowledge receipt of sample of your "Extract of Meat and Malt Wine," also one you sent a short time back. I have now quite **TWENTY PATIENTS** taking it, and as a flesh-forming and strength-producing agent I consider it **SECOND TO NONE**, being equally useful in all forms of debility.

Yours faithfully,
EDWARD HOPKINS,
L.R.C.P., L.F.P.S.

Messrs. Coleman & Co.

The following Preparations are also confidently recommended by the proprietors:—

Coleman's Liebig's Extract of Meat and Malt Wine, with QUININE.
" " " " " PEPSINE.
" " " " " IRON.
" " " " **NON-ALCOHOLIC.**

Each kind is sold in Bottles, 2s. 9d. & 4s. 6d. each; can be obtained of all Druggists, Wine Merchants, and Patent Medicine Vendors in the United Kingdom. Ask for COLEMAN'S LIEBIG'S EXTRACT OF MEAT AND MALT WINE, and "see that you get it."

If there is any difficulty in getting the Wine, write direct to the Manufacturers, who will forward—

SAMPLE PINT BOTTLE FREE BY POST ON RECEIPT OF 33 STAMPS.
" DOZEN " " RAIL " 30/-

SOLE MANUFACTURERS—

COLEMAN & Co., LIMITED, St. George's, NORWICH,
And 3, New London Street, LONDON, E.C.

The ordinary Liebig's Extract of Meat and Malt Wine is also sold in Railway Flasks 1s. each, or sent Free by Post for 14 Stamps.

Sole Proprietors of Osmazon, the new Beef Tea, sold in bottles by Grocers and Chemists everywhere.

FOR DISEASES OF THE STOMACH AND INDIGESTION,

LACTOPEPTINE

Exact Size and Shape of Bottle.

DOSE MEASURE
LACTOPEPTINE
Registered.
LACTOPEPTINE contains the five active agents of digestion, combined in the same proportion as they exist in the human stomach, and will digest food in a manner identical to that obtained under the influence of the natural gastric juice.
LACTOPEPTINE will be found far superior to all other remedies in Indigestion, Dyspepsia, and kindred diseases.
Also, particularly indicated in Anemia, General Debility, Chronic Diarrhœa, Constipation, Headache, Vomiting and Nausea in Pregnancy, and impoverished condition of the blood.
PRICE, 4/6.
PREPARED SOLELY BY
JOHN M. RICHARDS,
46, Holborn Viaduct,
(Late GT. RUSSELL ST.)
LONDON, E.C.

It is conclusively ascertained that LACTOPEPTINE will bring about the Digestion of Food in a manner perfectly identical with that obtained under the influence of the natural gastric juice.

THE extended use and adoption of LACTOPEPTINE by the MEDICAL PROFESSION affords indisputable evidence that its therapeutic value has been thoroughly established in cases of Indigestion, Dyspepsia, Loss of Appetite Impoverished Blood, General Debility, Intestinal and Wasting Diseases of Children, Chronic Diarrhœa, Constipation, Vomiting in Pregnancy, Headache, Nausea, and all diseases arising from Imperfect Nutrition.

From "Retrospect of Practical Medicine and Surgery," July 1877.

"A glance at the formula of **LACTOPEPTINE** would convince even the most sceptical of the valuable results that must ensue through its administration. It is a combination of all the digestive agents, consequently can never be administered without giving the utmost satisfaction."

The chief feature of **LACTOPEPTINE** (and the one which must gain it a preference over all digestive preparations) is that it *precisely represents in composition* the *natural digestive juices* of the *stomach*, *pancreas*, and *salivary glands*, and will therefore readily dissolve all foods necessary to the recuperation of the human organism.

Dose.—ONE-THIRD that of cheap substitutes, and giving results not within the compass of any other agent.

PRICE OF LACTOPEPTINE: 4/6 PER OZ.

Lactopeptine is prepared solely by
JOHN M. RICHARDS,
46, Holborn Viaduct, LONDON, E.C.

NOTE.—Pamphlet and Sample of Lactopeptine sent to the Medical Profession on request.

PROPRIETOR, LEOPOLD HOFF

Always Prescribe the HAMBURG

FOR INVALIDS CONSUMPTIVES DYSPEPTICS & ALL CHEST DISEASES

THE OLD, THE GENUINE, THE ORIGINAL ARTICLE
INTRODUCED IN GREAT BRITAIN 1863

HOFF'S MALT EXTRACT

Trade Mark Signature *Leopold Hoff*

It is perfectly Non-intoxicating, and yet a powerful Stimulant.

From the late DR. FOTHERGILL.

Herr Hoff, with *his Malt Extract*, has been the pioneer in the question of *Soluble Carbo-Hydrates* for *delicate children*, *for invalids*, and, as we now see, for *persons acutely sick* and *especially with high temperature.*

From DUNBAR SUTHERLAND, Ch.M., M.B.

CAITHNESS, *Sept.* 13*th*, 1888.

I have used it with marked benefit in a case of Neurasthenia, and am of opinion that the HAMBURG Hoff's Malt Extract is one of the best, if not the best preparation with which I am acquainted.

From DR. STRATHERN, L.P.S. Surgeon.

GOVAN, *Sept.* 1*st*, 1888.

I cannot too highly recommend the HAMBURG Hoff's Malt Extract. Especially in cases of Phthisis and Chronic Bronchitis, where it is combined with Spiritus Chloroformi. It has splendid effect.

From Dr. M. MAKUNA.

TREHERBERT, *Aug.* 28*th*, 1888.

I have much pleasure in stating that I have recommended your HAMBURG Hoff's Malt Extract to several of my patients, and I value it from a dietetic point of view as a good stomachic and digestive in cases of anolexia and convalescence. It is of special importance for wet nurses and mothers.

In Cases of Consumption, Diseases of the Chest, Diseases of the Lungs, Chronic Dyspepsia, Chlorosis, Anæmia.

CAUTION.—As there are similar named Extracts in the Market, Physicians are strongly advised never to omit the words "HAMBURG HOFF'S" when prescribing Hoff's Malt Extract, as their patients will then be supplied with the article to which the above Testimonials refer, and which has been prescribed by the English medical world since 1864.

NOTICE.—The Profession will be supplied, free of charge, with Samples, Copies of Medical and Scientific Opinions, on application to the address.—Leopold Hoff.

M. HOFF'S
LONDON
29 HOUSE.
NEW BRIDGE ST.
LUDGATE HILL. E.C.

MALCOLM WILSON'S INVALIDS' WINE.

Imported under the Protected Rights of MALCOLM WILSON, Montreal, Canada.

ST. MICHAEL'S VICARAGE,
APPLEBY, WESTMORELAND,
September 1st, 1887.

"Dear Sirs,—Your Invalids' Wine is the most wonderful thing in its way that I have come across. In some of the cases where I recommended it, the results were immediate; I should think it would, however, prove especially valuable in Chronic Affections of the nervous system, or during *recovery from illness. I never give Testimonials*, and have for many years advocated the cause of Temperance and Total Abstinence, but I cannot refuse to state what is my honest conviction respecting the Wine I ordered of you, and which I have since largely recommended, and it is this:—That in all cases of *Physical or Nervous Prostration*, where the use of a stimulating tonic seems to be indicated, your Invalids' Port is *just the thing*. You may make any use you please of this letter."

Believe me, truly yours,
ALBERT WARREN,
Vicar of Appleby St. Michael.

To Messrs. Hughes & Morris,
Wine Shippers, London.

SURREY, February 27th, 1888.

I am fully convinced that its good qualities have only to be brought before the Medical Profession to ensure its being warmly taken up. In cases of *Consumption* I have seen *great* and *marked improvement* take place on their using it.

——, M.D. and M.B., B.Ch., B.A.

DORSETSHIRE, February 10th, 1888.

I believe it to be a genuine Wine of great value. *It certainly supplies a long-felt want.*

——, M.R.C.S., L.S.A.

The LANCET, May 4th, 1889.

"As the result of Analysis, soluble and insoluble Phosphates, and a small quantity of Manganese were found in the ash.

"Ferric Chloride showed the presence of Tannin.

"The wine is Full-bodied and Sweet, and seems well adapted for the uses for which it is intended."

Awarded "CERTIFICATE OF MERIT" by Special Medical Jury, after a careful test at the UNIVERSAL FOOD EXHIBITION, LONDON, April 30th, 1889.

Can be ordered through Wine Merchants, Grocers, or Stores anywhere.

Price—Full Size Wine Bottles, 30s. per doz.; Half Size Wine Bottles, 15s. per doz. Carriage Paid.

Special terms to the Profession. Certificate of analysis will be posted free to any member of the Medical Profession on receipt of card.

Sole Importers—

HUGHES & MORRIS, WINE SHIPPERS AND MERCHANTS

4, Savoy Street, Strand, LONDON, W.C.

Telegraphic Address: "Acclimated, London."

DEMY 8VO, WITH TWO PLATES. PRICE 5S.

THE FORMS OF NASAL OBSTRUCTION

IN RELATION TO THROAT AND EAR DISEASE,

BY GREVILLE MACDONALD, M.D., LOND.

(Physician to the Throat Hospital).

LONDON: A. P. WATT, 2, PATERNOSTER SQUARE.

ANTISEPTIC SURGERY & MIDWIFERY.

SALUFER CUBES,

(Silico Fluoride of Sodium)

AN EFFECTIVE AND NON-TOXIC ANTISEPTIC,

For Surgical Dressings, and to render aseptic the hands of Surgeons, Obstetricians, and Nurses. See paper by Mr. A. W. Mayo Robson, F.R.C.S., *Lancet*, May 19, 1888.

In portable boxes, 1s. each, 10s. dozen, or store boxes of twelve dozen cubes, 5s. each, post free.

MADE ONLY BY

REYNOLDS & BRANSON, Wholesale Pharmacists, 13, Briggate, LEEDS.

CHRISTIA

A PERFECT SUBSTITUTE FOR

OILED SILK, GUTTA-PERCHA & INDIA-RUBBER SURGICAL SHEETS AND BANDAGES.

WATERPROOF AND NON-ABSORBENT.

MAY BE OBTAINED

ANTISEPTIC OR MEDICATED,

IN ANY WAY REQUIRED.

Does not become rotten or sticky when heated or when in contact with alcohol, turpentine and other fluids.

CHRISTIA *is, from its lightness and strength, eminently suitable for bandages, surgical sheets, plasters, and waterproof linings or coverings. As a medicated bandage, owing to its being combined with such antiseptics and remedies as carbolic, boracic, and salicylic acids, potassium silicylate, iodol, sozoiodol, iodine, etc.,* IT IS UNIQUE.

INTRODUCERS AND PROPRIETORS:—

T. CHRISTY & Co.,

25, LIME STREET, LONDON, E.C.

INTRODUCERS OF NEW AND RARE DRUGS.

S. MAW, SON & THOMPSON'S

Surgical Appliances.

Abdomen Bandages.

Abdomen Bandages and Pads for Prolapse of the Uterus, Inguinal and Umbilical Herniæ.

Arm Slings.

Arm Sockets, with Hooks, Rings, &c.

Artificial Eyes and Noses.

Artificial Legs, Arms, and Hands.

Bandages for the Leg, India-Rubber Web, and Martin's India-Rubber.

Bags and Braces for Irreducible Scrotal Hernia and Hydrocele.

Braces for Weak Backs and to prevent Stooping.

Belts for Weak Backs, Riding, Lumbago, and Sciatica.

Chest Expanders.

Cork Soled Boots for Shortened Limbs

Colotomy Pads and Belts.

Crutches and Crutch Sticks.

Elastic Stockings, Knee-caps, Socks, Leggings, Thigh Pieces, Armlets, and Wristlets.

Instruments for Writer's Cramp.

Moulded Leather Supports for—
- Diseases of Knee and Ankle,
- Dislocated Shoulder,
- Fractured Clavicle,
- Fractured Jaw,
- Fractured Olecranon,

Moulded Leather Supports for—
- Fractured Patella,
- Hip Joint Disease,
- Rider's Sprain,
- Ruptured Linea Alba,
- Ununited Fracture of the Thigh.

Orthopædic Boots.

Pin Legs of all kinds.

Plaster-of-Paris and Poroplastic Jackets.

Plugs for Prolapse of the Rectum or Piles.

Steel Supports for—
- Abduction and Adduction of the Leg,
- Anchylosis,
- Bunions,
- Eversion of the Foot,
- Fractured Jaw,
- Hemiplegia,
- Hip Joint Disease, including Sayre's and Thomas's,
- Infantile Paralysis,
- Loose Cartilage of the Knee,
- Paraplegia,
- Talipes,
- Torticollis (Wryneck),
- Over-riding Toes,
- Ununited Fracture of the Thigh and Humerus.

SURGICAL APPLIANCES.

Continued.

Steel Supports and Adjustments for Curvature of the Spine.

Steel Supports and Boots for—

- Anterior and Posterior Curvature of the Tibia,
- Inward and Outward Curvature of Upper and Lower Leg
- Inward and Outward Curvature of the Tibia.
- Infantile Paralysis.

Suspensory Bandages.

Trusses for Abdominal, Femoral, Inguinal, Irreducible, Scrotal, Umbilical Herniæ, Prolapsus of Rectum and Uterus.

Umbilical Bands for Children and Adults.

Urinals.

Nearly the whole of the above are manufactured on the premises, under the Superintendence of Competent Managers, and the adjustment of the various appliances can be accomplished with despatch.

For Plaster-of-Paris and Poroplastic Jackets it is desirable to give a few days' notice.

Convenient Waiting and Fitting Rooms.

Experienced Assistants, Male and Female, are always in attendance between the hours of 10 a.m. and 4 p.m. They can also be sent to any part of the United Kingdom by giving twenty-four hours' notice.

S. MAW, SON & THOMPSON,

LONDON, E.C.